

How to make a line graph using Excel 2003 or 2004

Step 1: Format your data sheet

- You can use the Excel file provided with this exercise or enter data yourself.
- Make sure the page has a title and each column of data has a title in the row above the data.
- You only need the “Date/Time” and “Temperature (*C)” columns for this exercise.

Temp at Waquoit Bay June 2005		
Date/Time	Air Temperature (*C)	Water Temperature (*C)
06/06/05 12:08:33.0	22.31	23.26
06/06/05 12:18:33.0	23.57	22.32
06/06/05 12:28:33.0	24.21	22.32
06/06/05 12:38:33.0	25.51	22.32
06/06/05 12:48:33.0	26.82	22.32
06/06/05 12:58:33.0	27.14	22.32
06/06/05 13:08:33.0	26.48	22.63
06/06/05 13:18:33.0	25.51	22.63
06/06/05 13:28:33.0	24.86	22.63
06/06/05 13:38:33.0	24.21	22.32
06/06/05 13:48:33.0	24.53	22.32
06/06/05 13:58:33.0	23.57	22.32
06/06/05 14:08:33.0	24.21	22.32
06/06/05 14:18:33.0	23.89	22.63
06/06/05 14:28:33.0	24.86	22.63
06/06/05 14:38:33.0	25.18	22.94

Step 2 - Highlight the data to be graphed.

- Click on the cell with the heading “Air temperature,” then hold down the control and shift keys. This selects the whole column of data and stops at the last entry.
- You could select both the temp and the date/time column when you want to make a line graph, but the graph is sometimes constructed incorrectly and it’s sometimes easier to add components one at a time than to undo incorrect parts of a graph.

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06/06/05 14:28:33.0	24.86	22.63
06/06/05 14:38:33.0	25.18	22.94

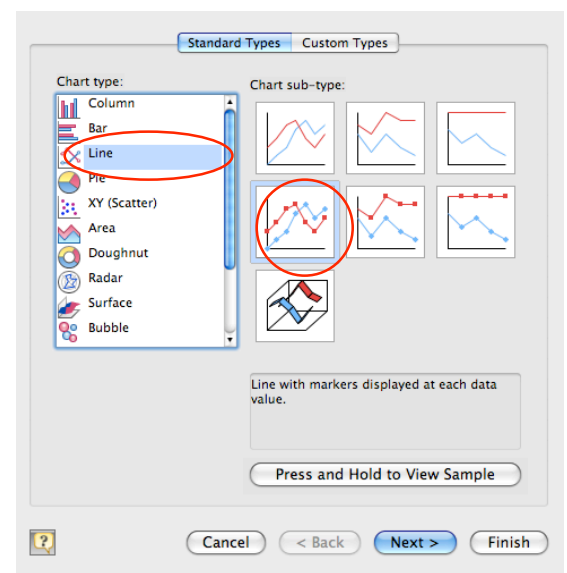
Step 3 - Select the Chart Wizard.

- You can do this by clicking on the **Chart Wizard** button on the toolbar at the top of the page.
- If you don’t have the chart icon, you can click on the “**Insert**” menu at the top of the page and choose “**chart**” to get the same result.



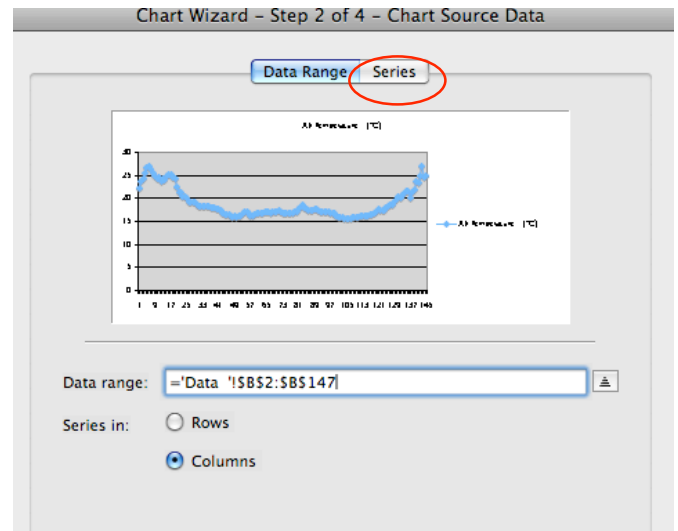
Step 4 - From the Chart Wizard dialogue box, select the chart type.

- For this activity, select a **line graph**, and click the box that shows lines with data points on them, then click “Next” which is the button highlighted in blue at the bottom of the dialogue box.



Step 5 – When you select a chart type, the chart wizard makes a small mock-up of your graph. There may be several things you need to change, but meanwhile, you can choose several attributes using the chart wizard.

- First, let's put the values we want on to the X axis. To do this, click on the “**series**” tab at the top of the box

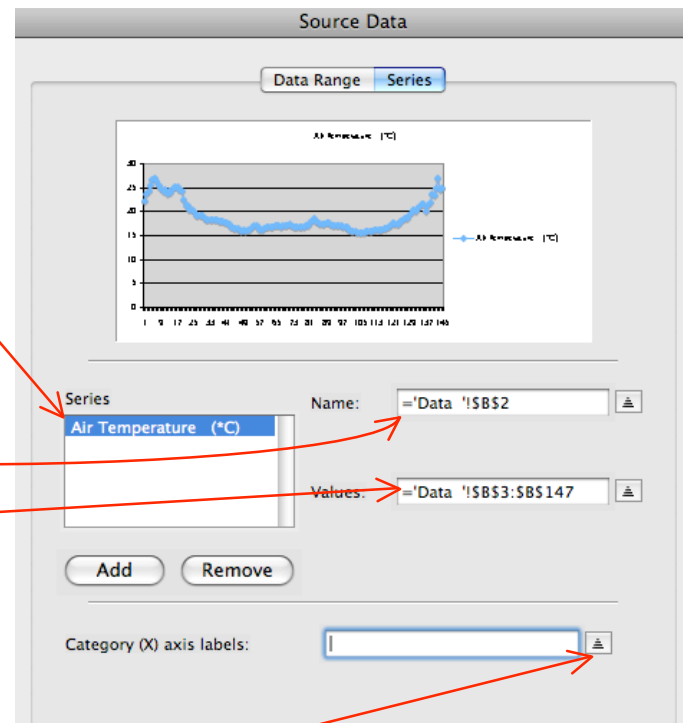


- You will see that the name for the air temperature data appears in the series box

A reference to the cell with the series title information is in the small upper space to the right.

A reference to the location of the data values for temperature is in the small middle field on the right.

We want to have the date and time values in the reference for the X axis, which is the lower space on the right. To do this click on the **small box** on the right side of the space next to the text “Category X axis labels”



Step 6- Choose the values for the X axis

- When you click the small box indicated in the picture above, the dialogue box changes shape. To choose X axis values, click on the first date/time value in column A on your spreadsheet., then hold down command + shift while you press the down arrow key to select all the values in the column.
- A dotted line will appear around the column to show that it has been selected.
- The range of values will appear in the space on the bar.
- Click on the small box on the right side again to return to the dialogue box.

Temp at Waquoit Bay June 2005

Date/Time	Air Temperature (°C)	Water Temperature (°C)
06/06/05 12:08:33.0	22.31	23.26
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06/06/05 14:28:33.0	24.86	22.63

Source Data
 =Data '1\$A\$3:\$A\$147

Step 7-When you are in the dialogue box, select **Next** at the bottom to go to the next part shown below. This box allows you to add a title to the chart, make changes on the legend, or make changes on the data labels. You may wish to add “Degrees C” for the Value (Y) axis

Chart Wizard – Step 3 of 4 – Chart Options

Titles Axes Gridlines Legend Data Labels Data Table

Chart title:
 Air Temperature (°C)

Category (X) axis:

Value (Y) axis:

Second category (X) axis:

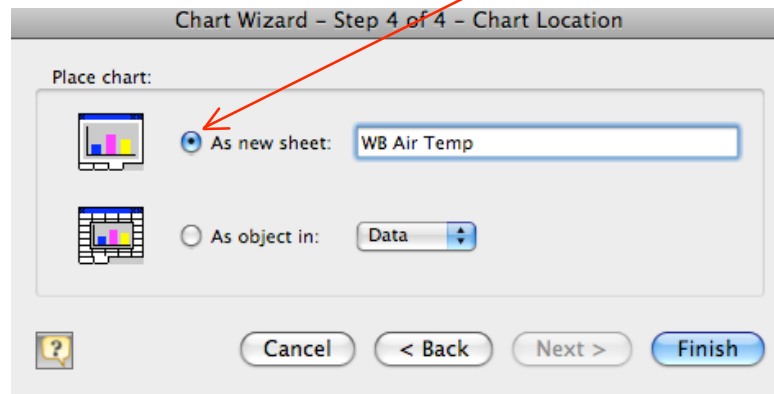
Second value (Y) axis:

?

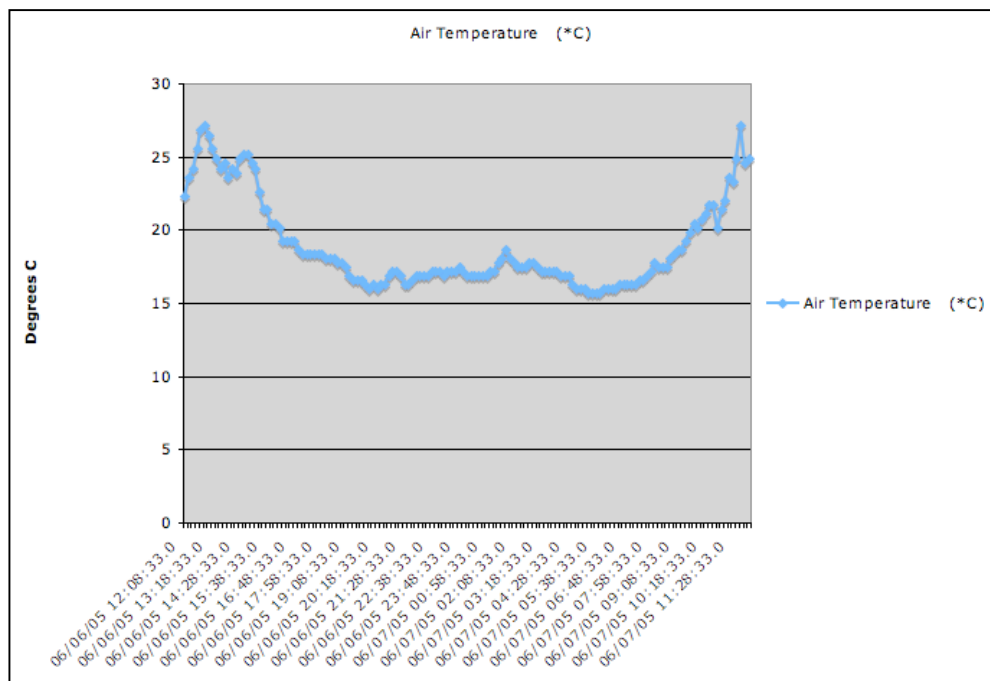
Cancel < Back Next > Finish

Step 8- Select **Next** to move to the final dialog box. Choose “As new sheet” to give your chart its own page and add a title for your graph.

Click “finish.”

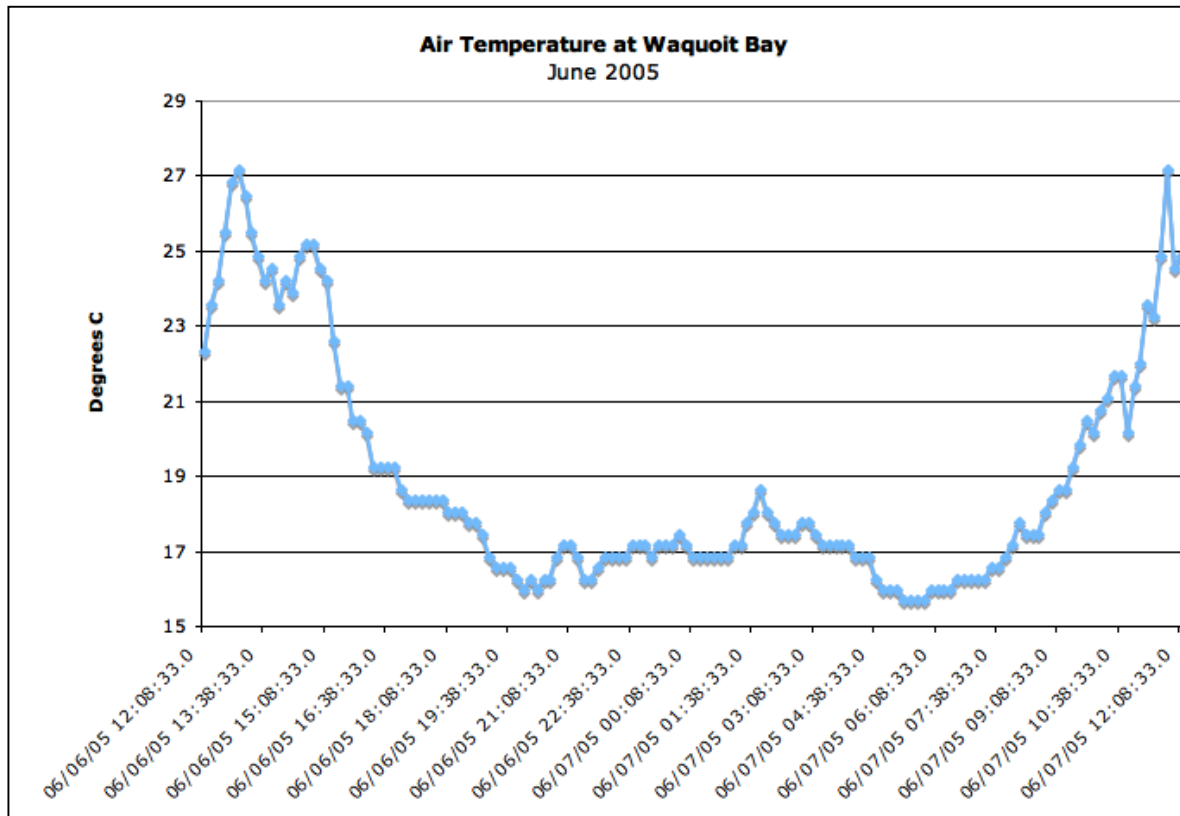


Step 9- your chart will look something like this:



- To get rid of the gray color, right click on the gray area and choose “**format plot area**” and then “**no fill**” for the color of the background.
- Drag the legend (label) to put it where you want it or delete it – it’s not necessary for this graph, and deleting it (or moving it) gives you more room.
- To adjust the Y axis scale, right click on the Y axis (along the side) and choose “**format axis**” and then “**scale**.” Change the minimum value to 15 and the maximum to 29.
- To reduce the number of labels on the X axis, right click on the X axis and choose “**format axis**” “**scale**” and enter 9 in “**number of categories between tick-mark labels**” and 9 in “number of categories between tick marks” to make the X axis easier to read (the greater the number of categories between tick marks, the fewer tick marks will appear on the chart).

- Right click on the line of data points to change the color, thickness, or marker type.
- Right click in the chart area and choose “Chart options” to change titles and other parts of the graph.



You can always type a question or topic in the “help” box at the upper right corner of the screen, or by clicking on the “help” menu, to get directions for how to format your graph.

You can add data using the same procedures.

- Right click on the chart area and choose “Source data”
- Click on the “Add” button and then the small button at the end of the “Values” bar. This will give you a small movable box like the one you used before.
- Go to the page that has the data you want to add and highlight the data.
- Click the small box again and the data will be added as a new line on the graph.
- Be sure to add a name for this new data on the “name” line.

Please contact Pat Harcourt if you have questions, corrections, or suggestions for this exercise.
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