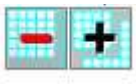
Computing Lesson 5: Line Graphs

Today you are going to use a series of data in a spreadsheet to create a line graph. **A line graph is used to display information which changes over time.** It is plotted on a graph as a series of points joined with straight lines.

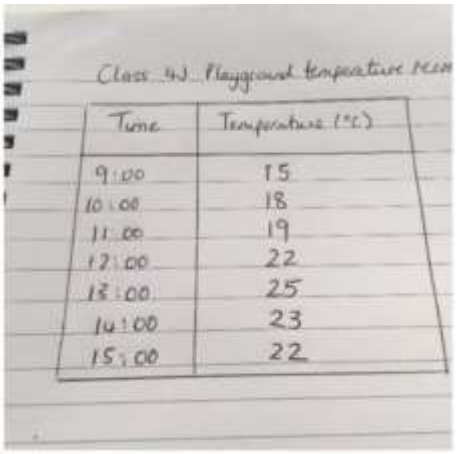
Go on your 2Dos and open 2Calculate 25.2.21 and click Start.

When it starts, there is a smaller screen in the middle with different choices. The labels at the top ('Sheet' and 'Lesson') are called tabs. For today we are going to click on the 'Sheet' tab (see below)

Click on the 'Sheet' tab. This also gives a few choices but for today click on the first one: an empty sheet with big rectangles.

You will probably have to resize the spreadsheet using the  in the bottom right of the screen. Click on the + symbol to make the rectangles smaller. These buttons can be pressed any time if you are running out of space and then the data can be copied and pasted into different cells if necessary.

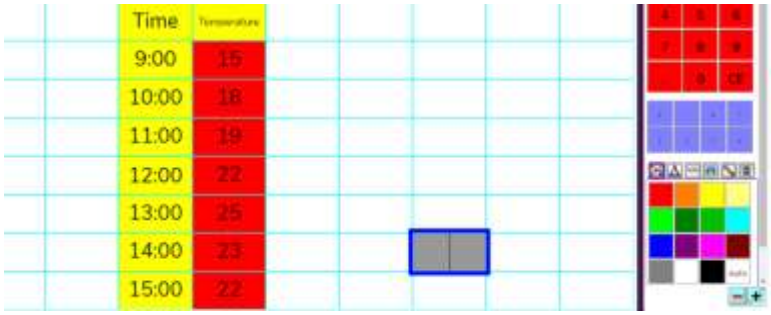
Class 4J collected data on the daytime temperature in the school playground. They recorded the temperature each hour during the school day. The results are below.



Class 4J Playground temperature recor

Time	Temperature (°C)
9:00	15
10:00	18
11:00	19
12:00	22
13:00	25
14:00	23
15:00	22

Put the data into a spreadsheet. It should look like this:



Time	Temperature
9:00	15
10:00	18
11:00	19
12:00	22
13:00	25
14:00	23
15:00	22

Now you are going to create a line graph.

Click on the Charts button in the top menu bar . This button will try to find all the relevant data in your spreadsheet and create a chart using it.

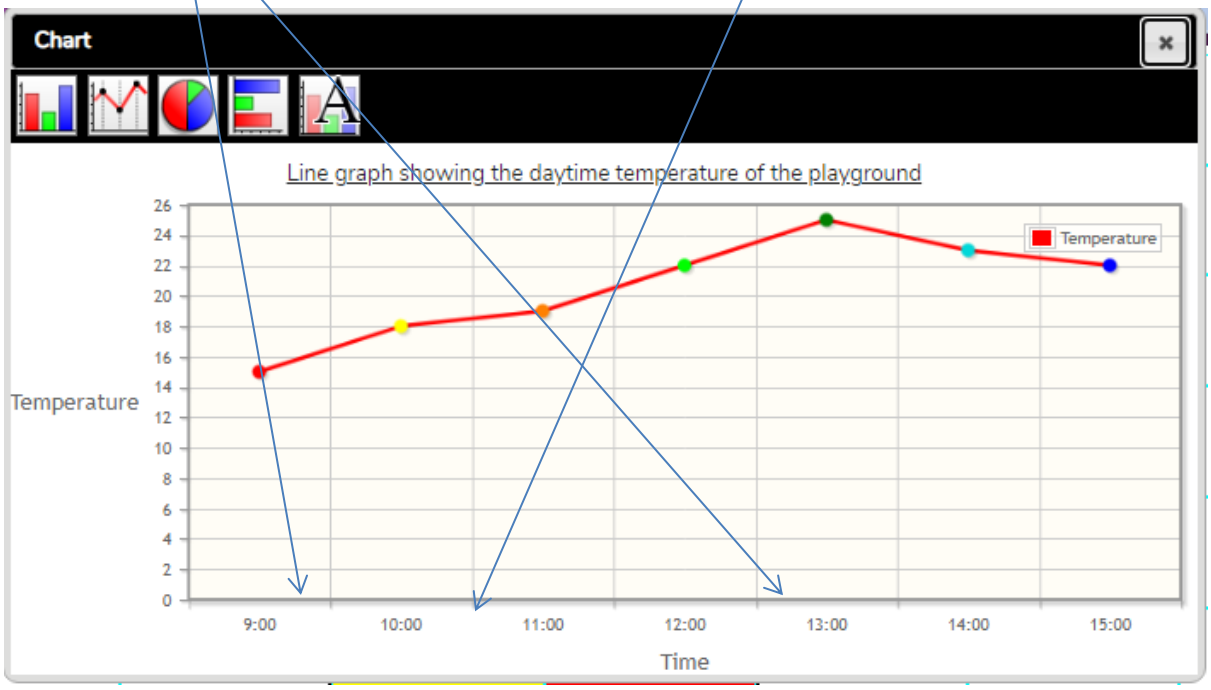
If the tool does not find all your data, you can drag the dotted lines (that will appear) to select the data that you want to include in your chart. The picture below is what it should look like at this point.

The default chart is a bar chart. Use the buttons within the chart pop up screen to change to a line graph.

The button in the chart pop up screen allows you to give your graph a title and renames the x and y axes. Think of an appropriate title for your line graph and label the x axis with 'Time' and the y axis with 'Temperature and click OK'.

To make the line graph bigger so you can see it more clearly, go to the bottom right of the pop up screen and an arrow will appear, you can drag this out to make it bigger.

The dots on the line graph show the hour and the vertical lines on the graph will show half past the hour because they are half way between the two hours. This arrow is pointing towards 10:30. This arrow is pointing towards 9:15 because it's a quarter of the way between 9:00 and 10:00. This arrow is pointing towards 12:45 because it's three quarters of the way between 12:00 and 13:00.



To answer the questions below, you need to be able to interpret (read) a line graph. If you want to find the temperature at a certain time of day you need to find the time first on the x axis. Put your finger on the time and then move up, when your finger hits the red line then you can move your finger left to the y axis (temperature) and read what temperature it is. If you want to find the time, you need to find the temperature first on the y axis (temperature). Put your finger on the temperature and move it to the right until your finger hits the red line. Then move downwards to the x axis (time) and read what time it is. Remember the scale on the y axis goes up in 2s.

1. At what time of the day was it 16°C?
2. At what time of the day was it 24°C?
3. What was the temperature at 10:30?
4. What was the temperature at 9:30?
5. What is the temperature at 14:30?

Now press which is on the top right of your screen and press 'Save and exit'. Then go back to your 2Dos and hand in.

The answers are at the bottom of this document.

Answers

1. 9:15
2. 12:45
3. 18.5°C
4. 16.5°C
5. 23°C