

WALT Read and Draw line graphs

Success Criteria I know the time is always on the x axis and the frequency of the time measured is on the y axis.

- I can measure trends over a period of time.
- There are two types of trends 1) Short Term (what happening over a month) 2) Long Term (what is happening over a decade)

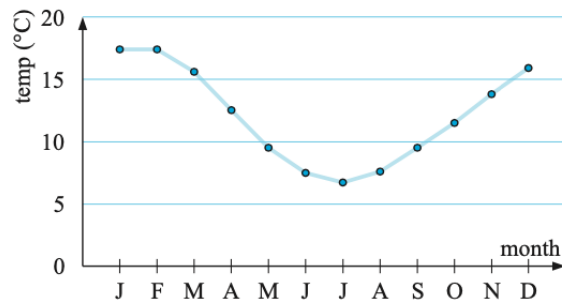
Line graphs are used to show trends (patterns) over a period of time. It may be company profits, weather patterns such as rainfall, sunshine hours, etc., or any data that has time involved. This type of data is often called **time series data**.

For these graphs the time is always on the horizontal axis.

For example, the mean monthly air temperatures for Taupo from 1961 to 1998 are:

<i>Month</i>	Jan	Feb	Mar	Apr
<i>Temp °C</i>	17.4	17.4	15.6	12.5
<i>Month</i>	May	Jun	Jul	Aug
<i>Temp °C</i>	9.5	7.5	6.7	7.6
<i>Month</i>	Sep	Oct	Nov	Dec
<i>Temp °C</i>	9.5	11.5	13.8	15.9

Data from NZ Met Service 2202-01-04



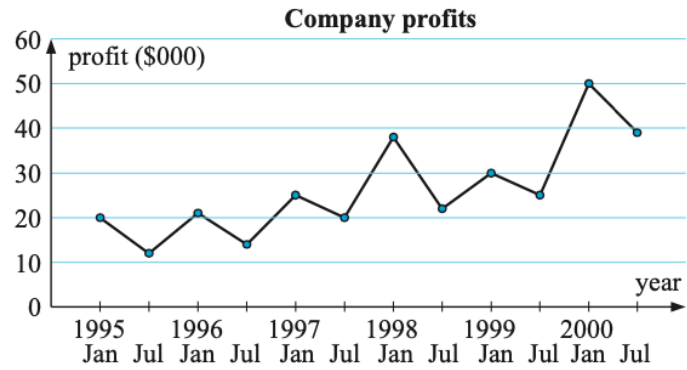
Draw a line graph for the following data first draw in your book and then use a spreadsheet to draw this data

The mean daily minimum air temperature averaged for the month over the whole year in Wellington is shown in the following table. Data supplied by Met Service.

<i>Month</i>	Jan	Feb	Mar	Apr	May	Jun
<i>Temp °C</i>	13.4	13.5	12.6	10.8	8.6	6.8
<i>Month</i>	Jul	Aug	Sep	Oct	Nov	Dec
<i>Temp °C</i>	6.2	6.5	7.7	8.9	10.3	12.2

- Draw a line graph to show this data. Remember to put the months on the horizontal axis.
- What month had the highest daily minimum?
- Which was the coldest month?
- Comment on the trend of the minimum temperatures in Wellington over a year.

The following time series graph shows the profits recorded by a company on a six monthly basis for 5 years from 1995 to 2000.



- a During which 6 month period did the company make its highest profit?
- b At what times in the year does the profit seem to fall a little? Could you suggest why this could be?
- c What type of goods could the company be making?
- d Is the company making more or less profit on a yearly basis as time goes on? (Look for a long term trend to answer this one.)

Collect, over a period of time, some time series data and graph the results. Write a brief report on the trends shown in your graph. Suggested topics could be:

- temperature at a certain time each day for 10 days
- daily sunshine hours over a two week period (information in the local newspaper or on the internet)
- growth (height) of a quick growing plant on a daily basis
- value of a particular share on the share market.