

# Drawing Line Graphs

Numeracy Guide

## SALT

A complete line graph will include the following:

### Scale

Choose **horizontal** and **vertical** scales that will accurately show the data.

The **independent** variable is shown on the horizontal (across) axis.

The **dependent** variable is shown on the vertical (up-down) axis.

### Axes

On each axis, the scale is clearly shown and increments evenly.

### Label


Label each axis **identifying** the data shown and the **units** used. E.g. Temperature ( $^{\circ}\text{C}$ )

### Title

The title should explain the purpose of the graph. For example, 'Patient temperature in one day' or 'Patient temperature vs time'.

### Poster or reminder on screen

### Is your graph SALTy?



- Scale**
  - Accurate horizontal and vertical scales chosen.
  - The **independent** variable is shown on the **horizontal** (across) axis.
  - The **dependent** variable is shown on the **vertical** (up-down) axis.
- Axes**

On each axis:


  - The scale is clearly shown.
  - The scale increments **evenly** (by the same amount each grid box).
  - The **vertical** axis starts at **zero**.
- Label**

Label each axis identifying the data and units.

  - Label the horizontal axis, e.g. Time (hours)
  - Label the vertical axis, e.g. Temperature ( $^{\circ}\text{C}$ )
- Title**
  - The title explains the purpose of the graph.

### Student checklist

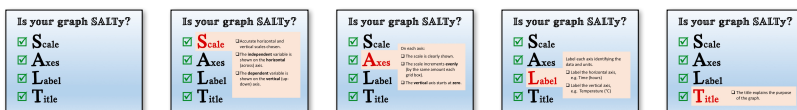
### Is your graph SALTy?



- Scale**
  - accurate scales chosen
  - independent variable  $\Rightarrow$  horizontal axis
  - dependent variable  $\Rightarrow$  vertical axis
- Axes**
  - show scale on axes, incrementing evenly
  - vertical axis starts at 0
- Label**
  - label with name and units
- Title**
  - the title explains the purpose of the graph

For students to complete after drawing a graph (and pasting next to their graph).

### PowerPoint available



SALT based on [Have you got SALT on your graph?](http://technomaths.edublogs.org/2011/08/04/have-you-got-salt-on-your-graph/), Britt Gow

<http://technomaths.edublogs.org/2011/08/04/have-you-got-salt-on-your-graph/>

## Example

For example, for this data:

### Horizontal scale

The horizontal scale should show the **independent** variable. In this example, time is the independent variable.

The measurements started at 10 am and concluded at 3 pm, our scale should go from 10 am to 3 pm in increments of 1 hour.

Use most of the width of the grid available.

### Vertical scale

The vertical scale should show the **dependent** variable – the data that has been measured (in this example Temperature ( $^{\circ}\text{C}$ )).

The vertical scale should start at zero. The maximum value on the scale needs to be at least the maximum value from the data.

To determine the increments:

- consider the maximum value, then
- count the number of intervals on the grid vertically and,
- find a suitable multiple to count by that will reach the maximum value in the number of intervals available. This is the increment. For example, counting by 5s.

*Remember the smaller the increment, the more accurate the line graph will be.*

Time	Temperature $^{\circ}\text{C}$
10 am	38
11 am	39
12 noon	40
1 pm	37
2 pm	34
3 pm	35
4 pm	36

For the example data,

- the maximum value is 40
- for the grid below, there are 10 intervals
- counting by 2s, for 10 intervals, will only allow a maximum value of 20
- counting by 4s will allow the maximum value of 40, however, some students may not be comfortable with multiples of 4 (4, 8, 12, 16...) a more familiar multiple, e.g. 5, may be the best option
- a multiple of 10 will compress the graph too much and limit the accuracy and usability to read other values off the graph.

Patient temperature over time

