wazmac QuickStart

Getting Started with Google Sheets

Background

Google provides an 'office' suite of software with a difference - you don't install it on your computer. All the software is accessed online, and your documents are stored 'in the cloud'.

This model provides access to applications and documents from desktop computers, laptop computers and mobile devices such as *iPads*, all with different operating systems, regardless of your location. So long as you have internet access!

The basic functionality of the various *Google* applications - Documents, Slides, Sheets and Drawings - is much the same as other equivalent software.

This document looks at some of the basic features of *Google Sheets*.

Getting Connected

This document assumes that you are already familiar with the basics of *Google Drive*, as detailed in a previous document in this series.

Google Drive is free to anyone who has a *Google* account. It is also a part of the *Google Apps for Education* suite of applications.

If you do not already have a *Google* account go to *https://accounts.google.com/SignUp* and create a new (free) account.

Software

Google Sheets are created and edited using a web browser.

Google's preferred web browser is *Google Chrome*, though other browsers seem to function quite happily with *Google Apps* too.

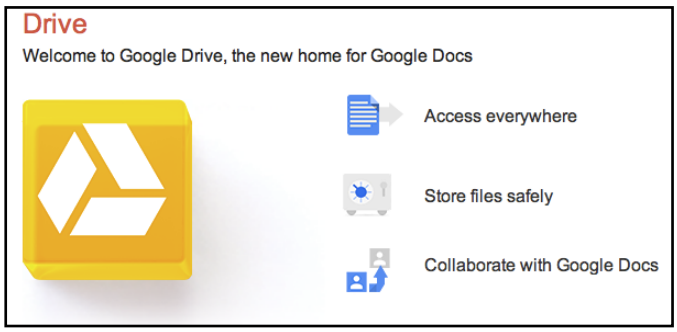
If you use an *iPad* you can install the *Google Drive* app to view *Google Sheets*, and undertake basic editing functions.

The examples shown in this document are created using a free Google account, however the processes described are similar with Google Apps.

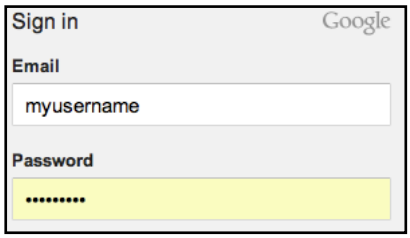
• More K-12 technology and planning resources are available at wazmac.com

1. *Create a Spreadsheet*

1.1. Open a web browser and go to *http://drive.google.com/*

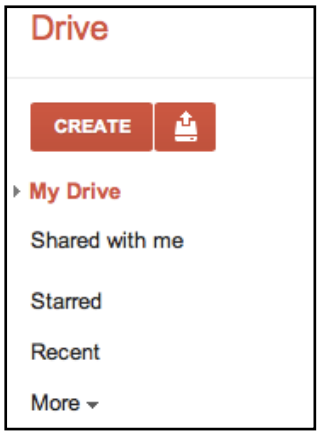


1.2. Sign to your *Google* account.



You may not need to do this if you are using a 'corporate' *Google Apps* account, and you are connecting through a corporate portal.

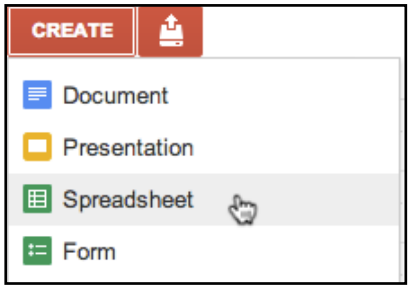
1.3. You will now see your **Home** folder area.



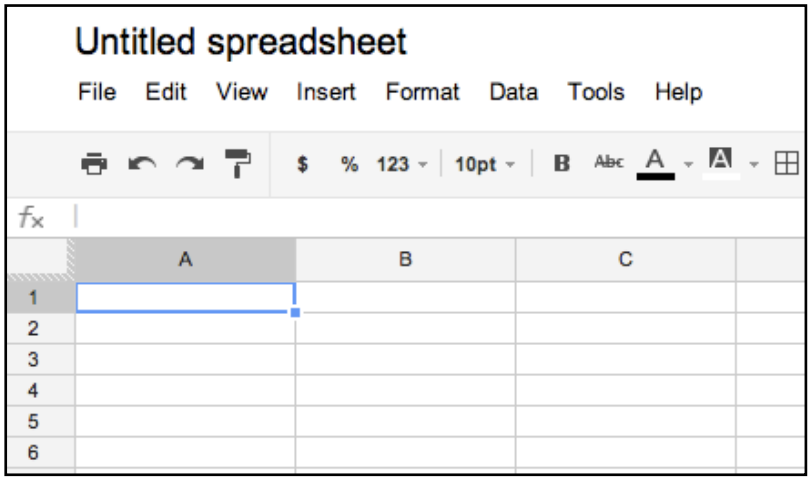
You may be prompted to **Download Google Drive**, which will install a small utility on your computer to sync files between your *Google Drive* folder and your computer.

You should only do this if you are the only person who uses the computer, as this will establish a permanent sync to your *Google Drive* folder.

1.4. Click on the **Create** button on the left of the screen and choose **Spreadsheet**.



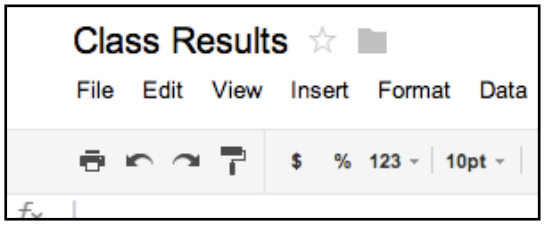
1.5. You will be presented with a window containing a regular spreadsheet format or *Rows* (labelled by numbers) and *Columns* (labelled by letters).



1.6. Click on the **Untitled spreadsheet** heading at the top left of the screen, and give the spreadsheet a name.

To explore the tools in the spreadsheet module, we will make a simple class results spreadsheet.

After entering a name for the spreadsheet, click on the **OK** button to save the name change.



2. Adding data to your spreadsheet

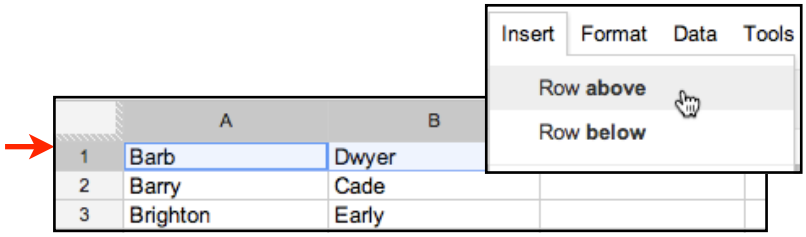
2.1. Enter some student names in the first two columns.

	A	B
1	Barb	Dwyer
2	Barry	Cade
3	Brighton	Early
4	Constance	Noring
5	Corey	Ander
6	Gene	Poole
7	Laura	Norder
8	Matt	Tress
9	Rick	Shaw
10	Tad	Moore
11	Winsom	Cash

2.2. But we forgot to give the columns a title!

So, select the top row, by clicking on the number '**1**' to the left of the first row.

Click on the **Insert** menu, and choose **Row above**.



2.3. Add the appropriate headers at the top of each column (columns A and B).

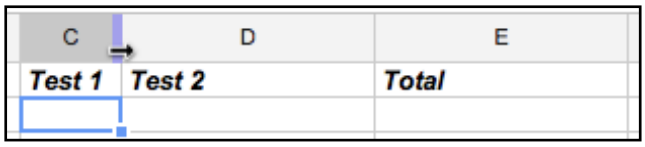
You can click to select cells **A1** and **B1**, then use the usual buttons on the toolbar to add **bold** and *italic* formatting to those cells.

	A	B	C
1	***First Name***	***Last Name***	
2	Barb	Dwyer	
3	Barry	Cade	
4	Brighton	Early	

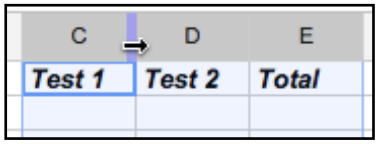
2.4. Also add titles to columns C, D and E, where we will record test results.

	A	B	C	D	E
1	***First Name***	***Last Name***	***Test 1***	***Test 2***	***Total***
2	Barb	Dwyer			
3	Barry	Cade			
4	Brighton	Early			

2.5. You can click and drag the divider between two column headers to adjust the width of the column.



2.6. You can click and drag across column headers to select multiple columns. Any changes made to the column width of one column will be applied to all the selected columns, rather than adjusting each column individually.



Note: As you work you will notice (at the top of your screen) that your work is saved automatically.

2.7. Add some grades to the *Test 1* and *Test 2* columns.

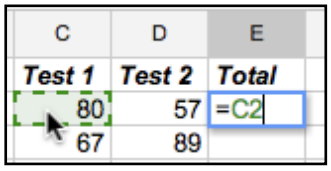
	A	B	C	D	E
1	***First Name***	***Last Name***	***Test 1***	***Test 2***	***Total***
2	Barb	Dwyer	67	89	
3	Barry	Cade	89	90	
4	Brighton	Early	67	86	
5	Constance	Noring	68	57	
6	Corey	Ander	78	58	
7	Gene	Poole	79	98	
8	Laura	Norder	86	95	
9	Matt	Tress	56	86	
10	Rick	Shaw	64	58	

3. Adding calculations to your spreadsheet

3.1. Click your cursor in the cell immediately below the heading in the **Total** column. In our example this is cell **E2**.

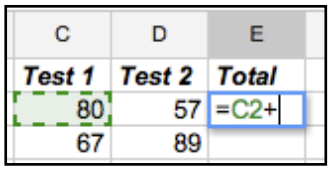
3.2. Type an **=** sign. This tells the spreadsheet that we are going to insert a calculation in the cell.

Click in cell **C2**.

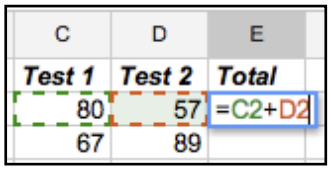


You will see that cell name is added after the = sign in cell **E2**.

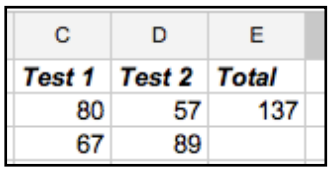
3.3. Type a **+** sign, after the **C2** entry.



3.4. Click in the cell **D2**, to add that cell to the calculation.



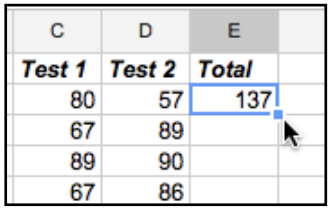
3.5. Press the **Return** key to close the calculation and see the result of your handiwork.



3.6. Now, rather than repeat that same process for every cell in the **Totals** column, we are going to use the option to *Fill Down*.

Click your cursor in cell **E2**.

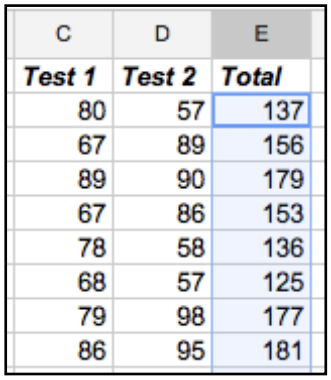
You will notice a small blue handle on the bottom right corner of the cell.



C	D	E
Test 1	***Test 2***	***Total***
80	57	137
67	89	
89	90	
67	86	

3.7. Click on this handle (your cursor will become a cross-hair) and drag the handle down the column, until you reach the last row.

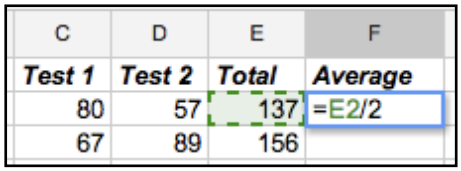
When you release the mouse, your calculation will be reproduced in each cell down the column.



C	D	E
Test 1	***Test 2***	***Total***
80	57	137
67	89	156
89	90	179
67	86	153
78	58	136
68	57	125
79	98	177
86	95	181

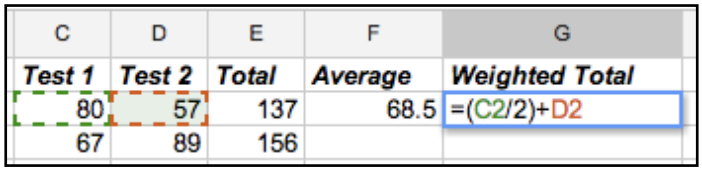
3.8. Try some other common calculations...

- Average...



C	D	E	F
Test 1	***Test 2***	***Total***	***Average***
80	57	137	=E2/2
67	89	156	

- Weighted total...



C	D	E	F	G
Test 1	***Test 2***	***Total***	***Average***	***Weighted Total***
80	57	137	68.5	=(C2/2)+D2
67	89	156		

These cells can also be ‘filled down’ using the small blue handle.

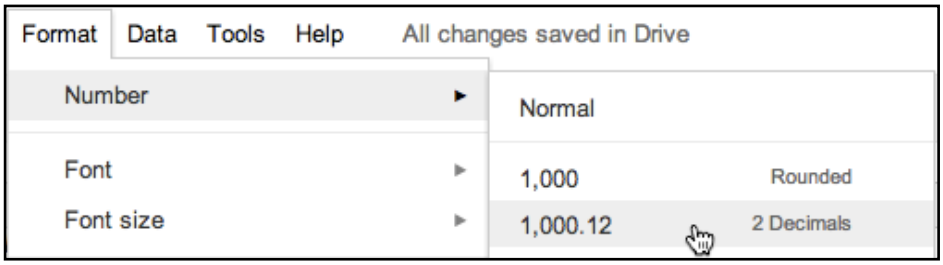
4. Other formatting options

4.1. *Number rounding*

4.1.1. Click and drag to select all the cells containing a calculation.

C	D	E	F	G
Test 1	***Test 2***	***Total***	***Average***	***Weighted Total***
80	57	137	68.5	97
67	89	156	78	122.5
89	90	179	89.5	134.5
67	86	153	76.5	119.5
78	58	136	68	97
68	57	125	62.5	91
79	98	177	88.5	137.5
86	95	181	90.5	138

4.1.2. Click on the **Format** menu, > **Number** > **2 decimals**.



4.1.3. Your additions will now be rounded to your specified number of decimal places.

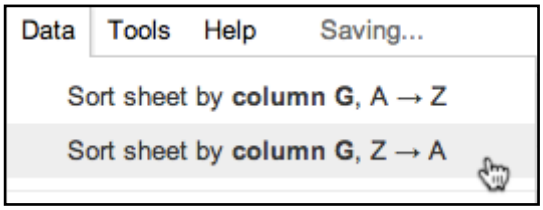
C	D	E	F	G
Test 1	***Test 2***	***Total***	***Average***	***Weighted Total***
80	57	137	68.50	97.00
67	89	156	78.00	122.50
89	90	179	89.50	134.50
67	86	153	76.50	119.50
78	58	136	68.00	97.00
68	57	125	62.50	91.00
79	98	177	88.50	137.50
86	95	181	90.50	138.00

4.2. *Sorting columns*

4.2.1. Click your cursor in one cell in the **Weighted Total** column (*Column G* in our example spreadsheet).

C	D	E	F	G
Test 1	***Test 2***	***Total***	***Average***	***Weighted Total***
80	57	137	68.50	97.00
67	89	156	78.00	122.50
89	90	179	89.50	134.50

4.2.2. Click on the **Data** menu, and choose **Sort sheet by column G, G-Z**.



4.2.3. Your students, and their results, will now be sorted from highest to lowest.

C	D	E	F	G
Test 1	***Test 2***	***Total***	***Average***	***Weighted Total***
86	95	181	90.50	138.00
79	98	177	88.50	137.50
89	90	179	89.50	134.50
86	88	174	87.00	131.00
98	75	173	86.50	124.00
67	89	156	78.00	122.50

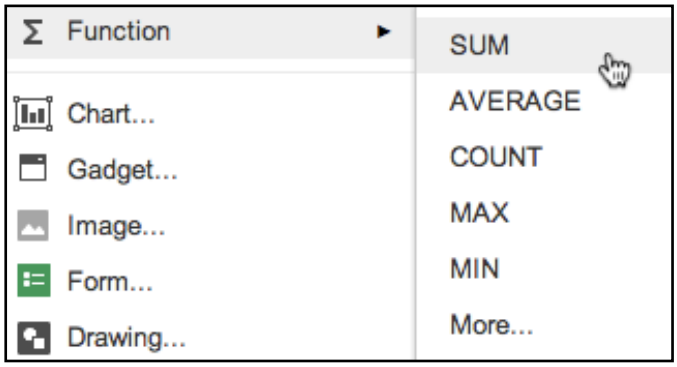
4.3. *More Functions*

While it is beyond the scope of this document to delve too deeply into all the calculations that you might want to use in a spreadsheet, it is worth noting where to look for more options.

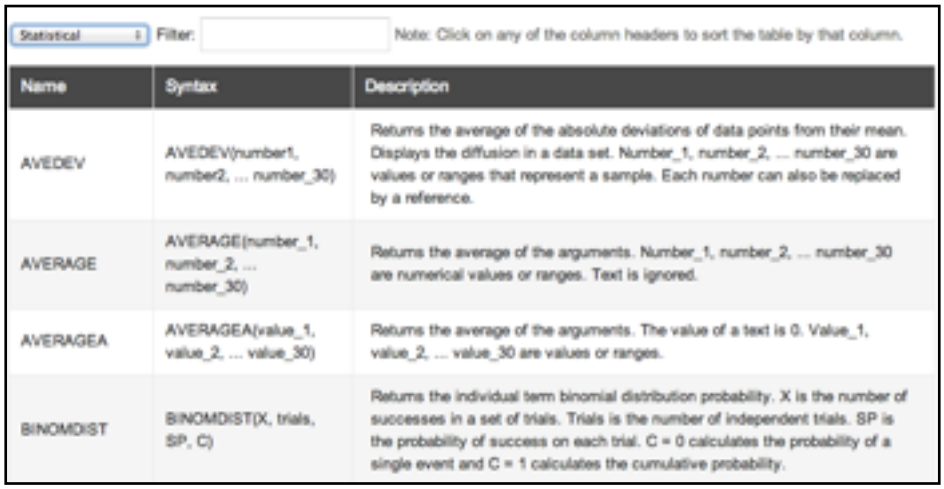
The calculations we have performed on he previous pages are known in spreadsheets as *Functions*.

Rather than have to design a formula for every calculation that we need to perform, *Google Spreadsheets* can insert the same *Functions* as most other spreadsheet applications.

Click on the **Insert** menu and choose **Function**.



The most common functions are listed there. Clicking on the **More** option will take you to a website with a long list of Functions that *Google Spreadsheets* will recognise, with some info about each function.


Statistical Filter: Note: Click on any of the column headers to sort the table by that column.

Name	Syntax	Description
AVEDEV	AVEDEV(number1, number2, ... number_30)	Returns the average of the absolute deviations of data points from their mean. Displays the diffusion in a data set. Number_1, number_2, ... number_30 are values or ranges that represent a sample. Each number can also be replaced by a reference.
AVERAGE	AVERAGE(number_1, number_2, ... number_30)	Returns the average of the arguments. Number_1, number_2, ... number_30 are numerical values or ranges. Text is ignored.
AVERAGEA	AVERAGEA(value_1, value_2, ... value_30)	Returns the average of the arguments. The value of a text is 0. Value_1, value_2, ... value_30 are values or ranges.
BINOMDIST	BINOMDIST(X, trials, SP, C)	Returns the individual term binomial distribution probability. X is the number of successes in a set of trials. Trials is the number of independent trials. SP is the probability of success on each trial. C = 0 calculates the probability of a single event and C = 1 calculates the cumulative probability.

4.4. The **Functions** menu can also be accessed by clicking on the **Functions** button in the toolbar.

5. *Graphing spreadsheet data*

Numerical data is often best understood with a more visual interpretation. *Google Spreadsheets* includes the option to graph your data.

For this example we will use a spreadsheet that might be constructed by students in a *Health* class, to measure the effects of exercise on heart rate.

5.1. Create a spreadsheet with two columns, labeled **No of Steps** and **Pulse**.

	A	B
1	**No of Steps**	**Pulse**
2		
3		
4		
5		

5.2. Add some data to the first column, in increments of 10 steps.

	A	B
1	**No of Steps**	**Pulse**
2	0	
3	10	
4	20	
5	30	
6	40	
7	50	

5.3. Now take your pulse (while resting - hopefully the spreadsheet exercise will not have increased your heart rate too much!) and add that to the **Pulse** column.

	A	B
1	**No of Steps**	**Pulse**
2	0	58
3	10	
4	20	
5	30	
6	40	
7	50	

5.4. Find a step, and step up and down the step (as you would in a step class at a gym) 10 times - 1 step per second - and measure your pulse rate per minute.

	A	B
1	**No of Steps**	**Pulse**
2	0	58
3	10	80
4	20	
5	30	
6	40	
7	50	

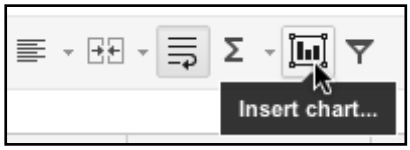
5.5. Repeat the process for each of the other entries in the **No of Steps** column.

	A	B
1	**No of Steps**	**Pulse**
2	0	58
3	10	80
4	20	90
5	30	90
6	40	95
7	50	98

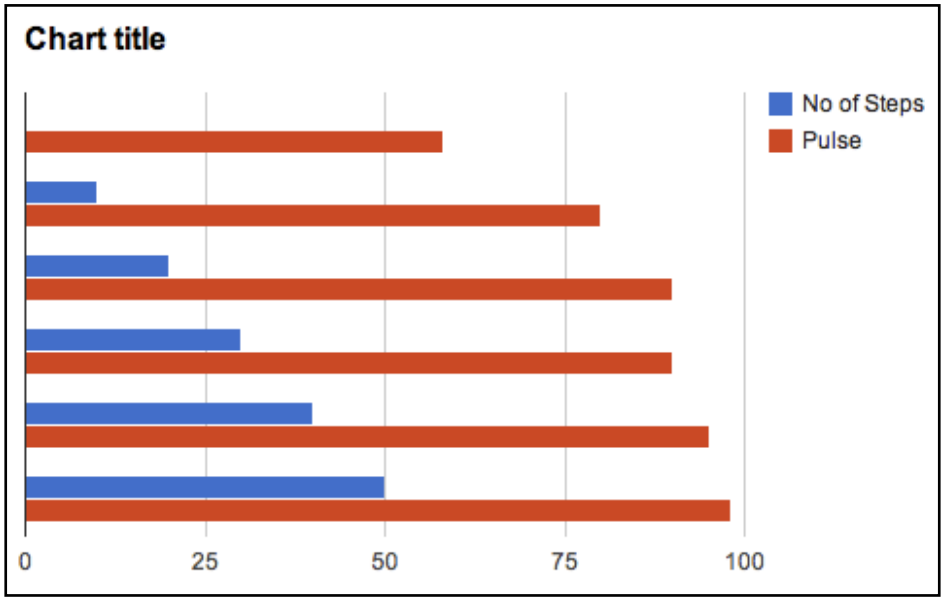
5.6. Click and drag to select the data (and column headers) in your spreadsheet.

	A	B
1	**No of Steps**	**Pulse**
2	0	58
3	10	80
4	20	90
5	30	90
6	40	95
7	50	98

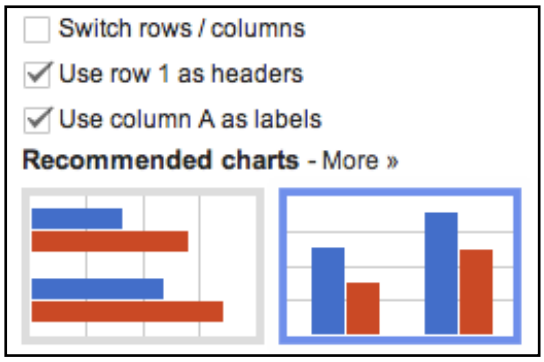
5.7. Click on the **Insert Chart** button in the toolbar.



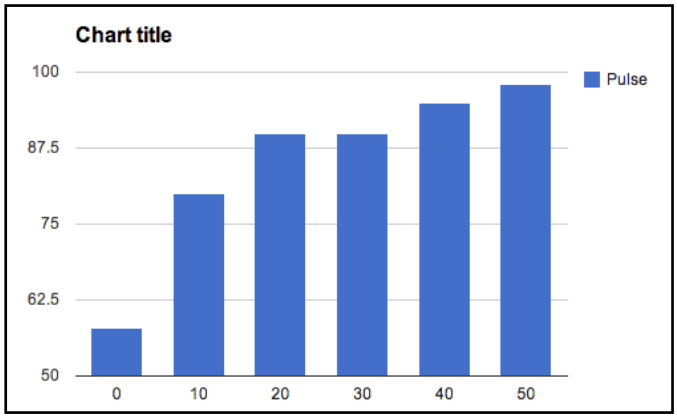
5.8. The default bar chart will include a bar for each column in your spreadsheet.



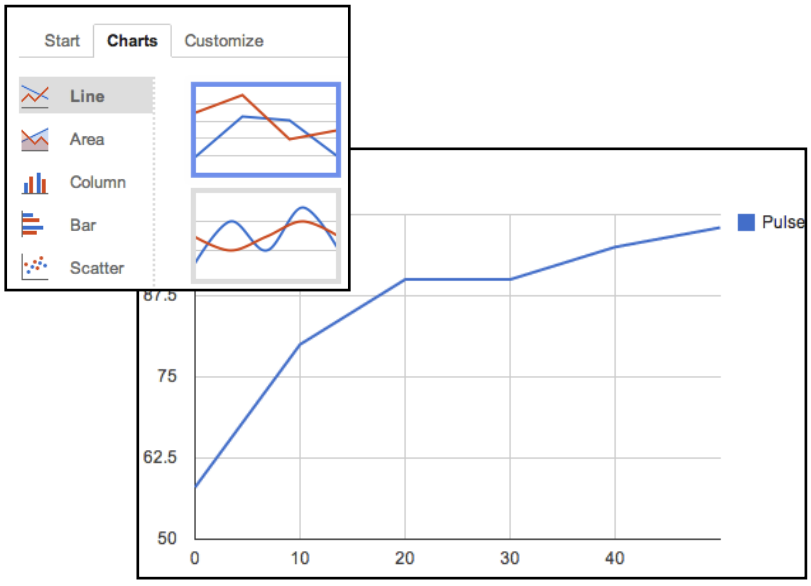
5.9. On the left of the chart, check the option to **Use column A as labels**, and select the **vertical** bar chart.



5.10. The chart will now make a little more sense.

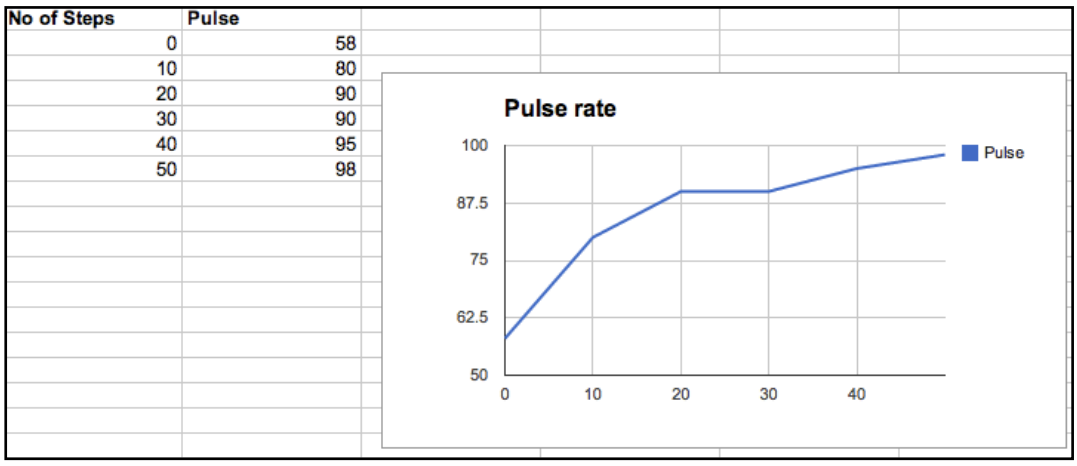


5.11. Clicking on the **Charts** tab will provide further options to select a more suitable chart for your purpose.

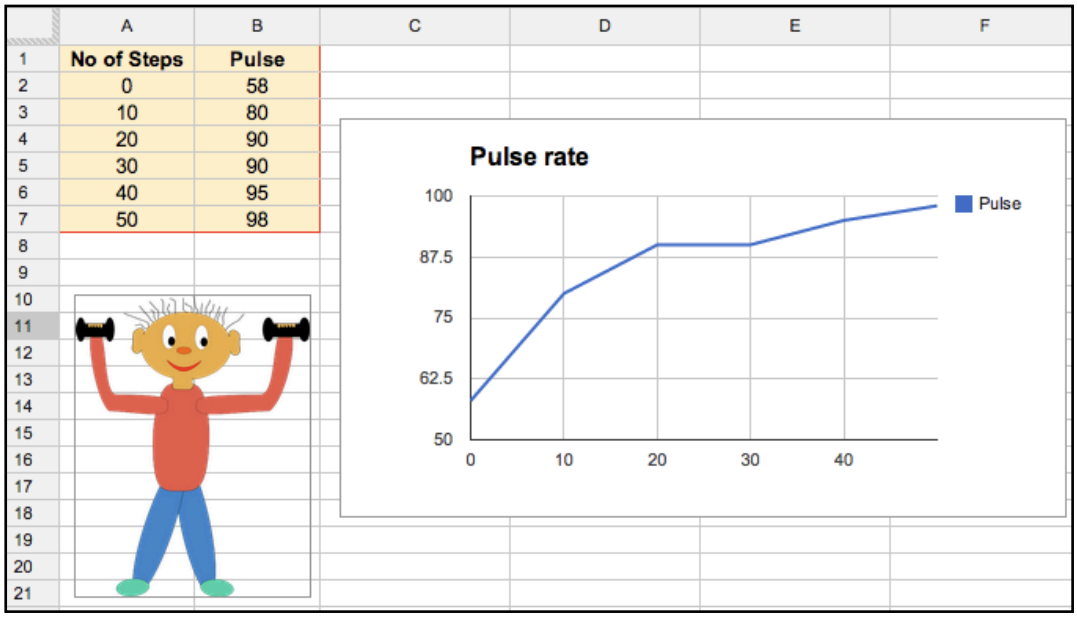


5.12. Click the **Insert** button to add the chart to your spreadsheet.

An **edit** button will appear in the chart window, giving you the opportunity to provide a suitable title for the chart.



5.13. Explore the other formatting options - adding borders, changing text and cell colour, as well as Inserting an image....



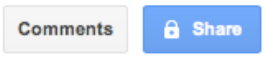
6. Sharing your spreadsheet

One of the advantages of using an online spreadsheet is that you can easily make the spreadsheet available to others. This is particularly useful for collaborative projects, or for online classroom resources.

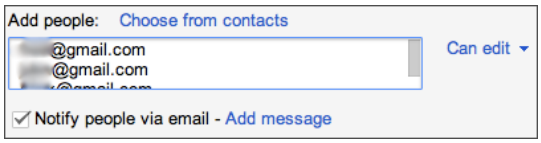
Another document in this series provides more detail about sharing Google Docs.

6.1. *Collaborating*

6.1.1. With a spreadsheet open, click on the **Share** button at the top right of the window.



6.1.2. Add the email addresses of other *Google* users with whom you wish to collaborate on the spreadsheet. You can add people from your *Google Contacts*.

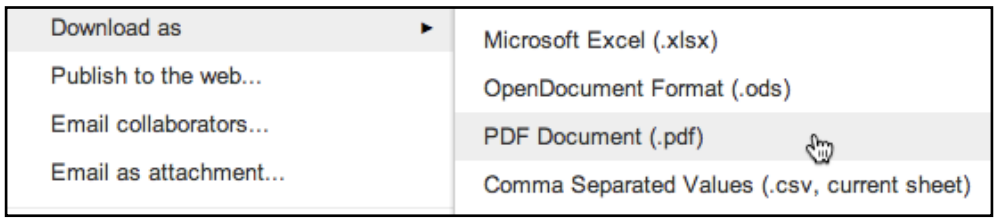


6.1.3. Using the **Can edit** pop-up menu to the right of the email address field, you can choose what level of access those people have to the shared spreadsheet. You can also assign rights individually after you have shared the document.

6.2. *Making a local copy*

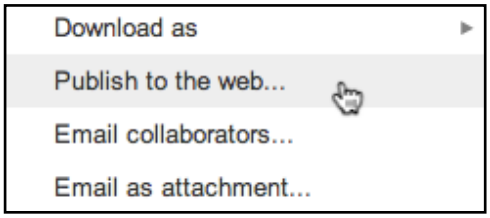
Your spreadsheet is stored in the cloud. You can download the spreadsheet in various formats to store on your local computer.

6.2.1. Go to the **File** menu and choose **Download as**

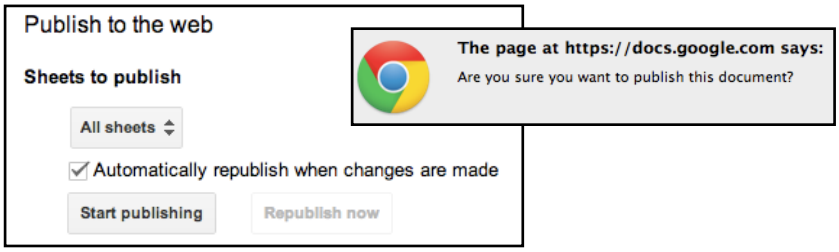


6.3. *Sharing our spreadsheet available through a web link*

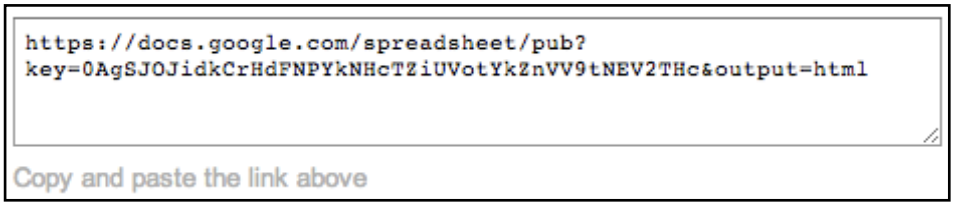
6.3.1. Go to the **File** menu and choose **Publish to the web.**



6.3.2. You will be given some options, and may be asked to confirm your actions.



6.3.3. You will now be presented with a window displaying a direct link address, which you can copy and paste to a web page, email, etc.



Note: You can view your Google spreadsheet on an iPad using the web sharing option, or using the Drive app. There is also some editing functionality for Google Spreadsheets available on an iPad, using the Drive app.