This will install all the necessary extra software and some simple examples.
(If you do not have internet on your Pi then put your SD card into a card reader and try using your browser to right-click and save the script direct to your SD card and then put it back into your Pi and run the second instruction)

Connecting Components Up

Extreme care should be taken when connecting hardware to the GPIO pins as it can damage your Pi – only do this if you're confident of your ability to follow these instructions correctly. At a minimum you should get a breadboard and use some female-male 0.1 leads (available from RS/CPC or your local Maplin). Check out some GPIO pin guides to make sure you know what pins do what.

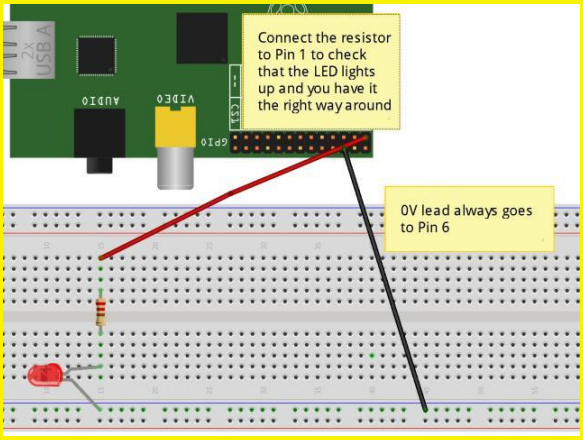

Figure 1 - LED Test

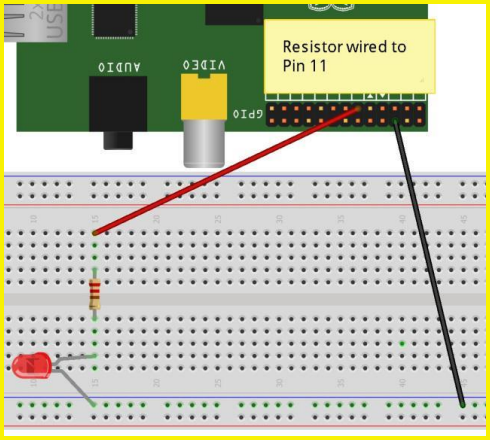

Figure 2 - GPIO Test

As in Figure 1 above, wire up Pin 1 (3.3V) to (at least) a 330ohm resistor – connect that resistor to the long lead (this is the positive lead) of an LED and then connect the other end of the LED to Pin 6 (Ground). This should cause the LED to light up. If it doesn't work try reversing your LED, as you probably have the polarities reversed. Once working, you can now move the red (or whatever colour you have used) lead from Pin 1 to Pin 11, as in Figure 2 above.

You should now run the special Scratch icon (Scratch GPIO) on your desktop. This is actually a completely normal version of Scratch, it just runs a little Python background program to allow Scratch to talk to the GPIO. If you have any Python programs accessing the GPIO running already this could cause your Pi to crash when opening Scratch GPIO. To avoid this, open an LX Terminal window and run: sudo killall python

To test out the GPIO control in Scratch, click File>Open and select blink11 from /home/pi/Scratch. Once the program has loaded, click on the Green Flag and your LED should now blink on for 1 second and off for 2 seconds – see troubleshooting on the Cymplecy blog if this doesn't happen.

What more can I do with Scratch and the GPIO?

Next time we will be looking at more exciting ways to use the GPIO with Scratch.

Article by Simon Walters and Aaron Shaw