

# Raspberry Pi for Teachers

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Hack Day Organiser, Technology Education Consultant,  
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# Should you get Raspberry Pis for your classrooms?

Honestly?

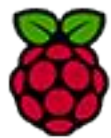
Right now?

Probably not!

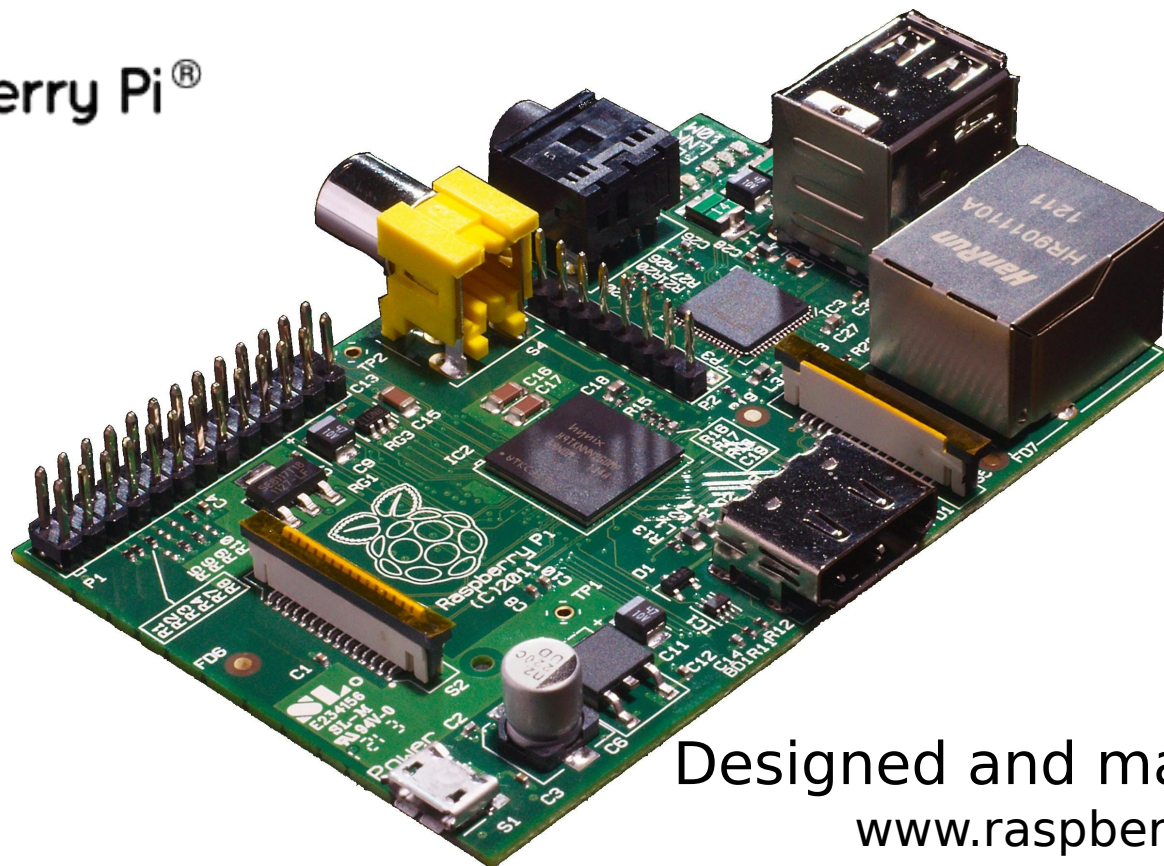
<stunned silence>

# The Raspberry Pi

A single board, credit card sized, general purpose computer



Raspberry Pi®



Designed and made in the UK!  
[www.raspberrypi.org](http://www.raspberrypi.org)

# Demo Time!

Booting up a Raspberry Pi for the first time, featuring NOOBS\* 1.3.4.



\***New Out Of Box Software** - [www.raspberrypi.org/downloads](http://www.raspberrypi.org/downloads)

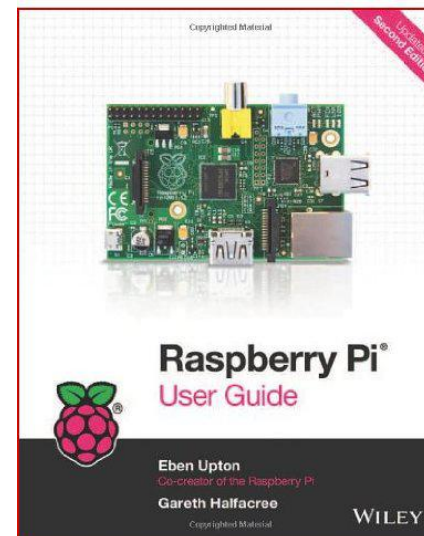
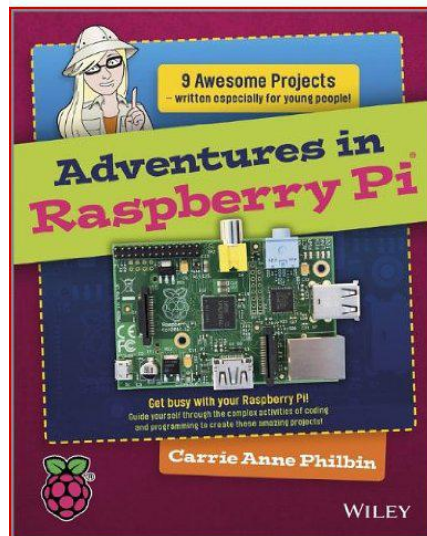
# To get the most from your Raspberry Pi

It really **does** need to be networked and connected to the internet.

Keep the software up to date with:

```
sudo apt-get update; sudo apt-get upgrade
```

And buy these two books!



# What makes the Raspberry Pi different?



Runs Linux rather than Windows.

Comes with Scratch

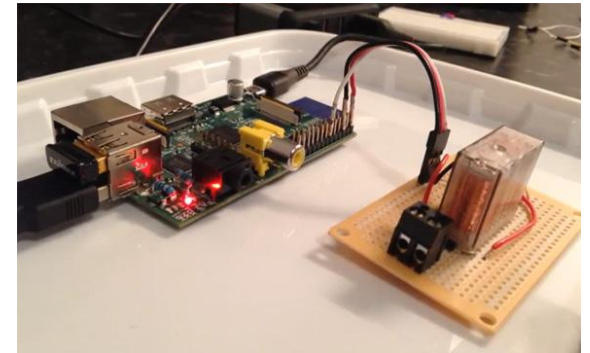


and Python



pre-installed

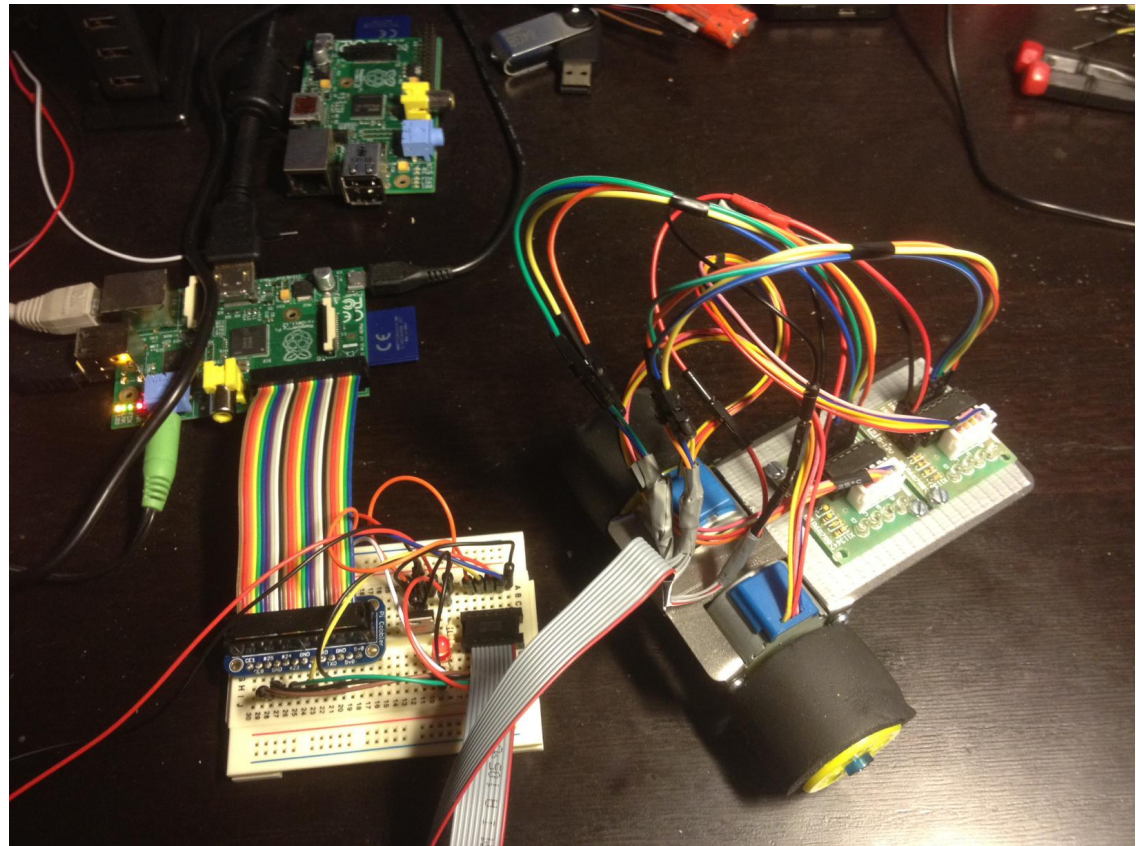
The General Purpose Input Output (GPIO) pins allow it to be connected to sensors and motors and ...





# What cool stuff can it do?

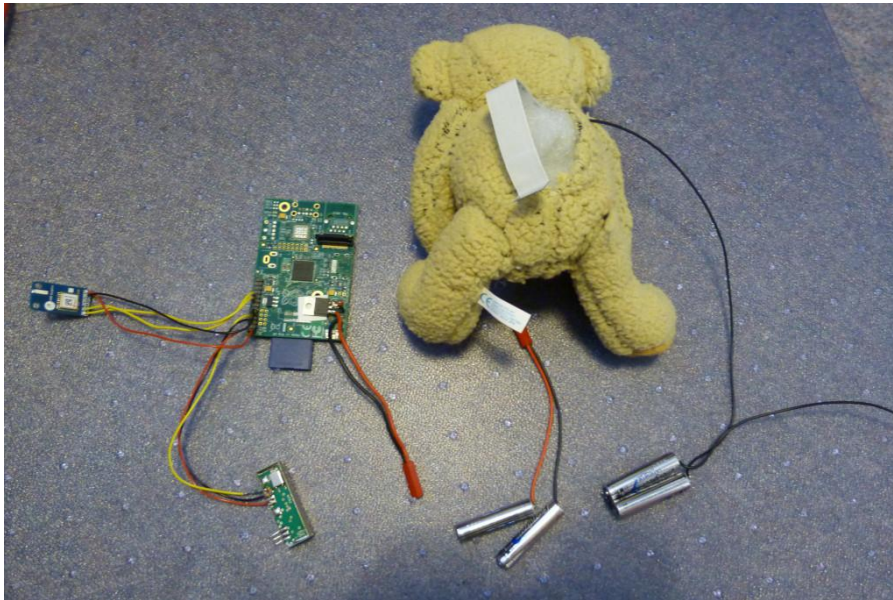
Control Robots...



Keiron Spinner

<http://community.computingatschool.org.uk/resources/1347>

# Go in to space!



David Akerman  
[www.daveakerman.com](http://www.daveakerman.com)



Or at least take a look around...



#UPSTAGRAM, a Hackerloop creative hack into Instagram

The colorful flying house from the movie UP! recently crossed the sky above Paris, just between the Eiffel Tower and the Sacré Coeur! On board, an open-source electronic device, a Raspberry Pi, publishing live pictures on Instagram.



[hackerloop.com/upstagram/](http://hackerloop.com/upstagram/)

# Make music...

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## Making Computer Science Audible

Sonic Pi is an open source programming environment designed to explore and teach *programming concepts* through the process of creating new sounds. Sonic Pi comes with an associated *scheme of work* which emphasises the importance of *creativity* in the learning process and gives users the *control* to turn their sonic ideas into reality.

```
sudo apt-get update ; sudo apt-get install sonic-pi
```

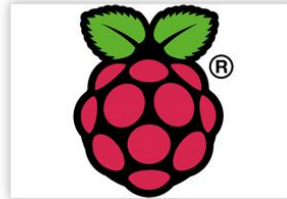
### Get KS3 Scheme of Work

Make the music you want and have fun learning programming while you play.



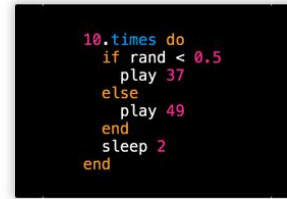
#### Classroom Ready

Sonic Pi comes with an associated *scheme of work* targetted for KS3 introductory Computer Science. This has been developed in harmony with



#### Designed for Raspberry Pi™

Sonic Pi has been designed from the ground up to work with the *Raspberry Pi™*. All you need to convert your RPi into a music environment is



#### Simple and Fun to Program

Sonic Pi has been designed to be as simple as possible to get started coding sounds and rhythms. Simply type your program, press play and

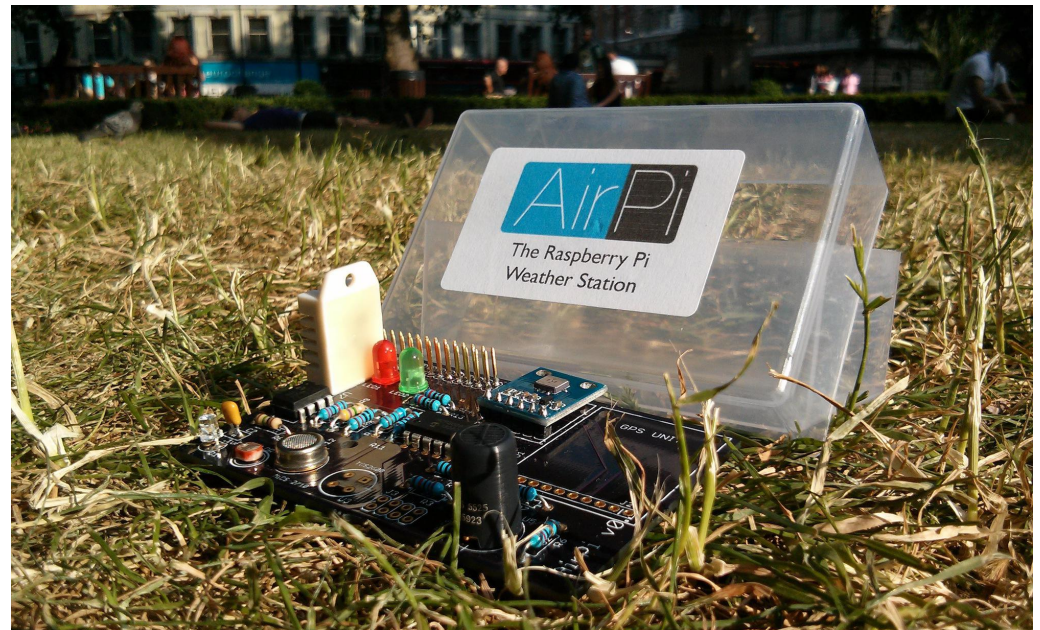
[www.cl.cam.ac.uk/projects/raspberrypi/sonicpi/](http://www.cl.cam.ac.uk/projects/raspberrypi/sonicpi/)

# Monitor the weather...

The AirPi is a Raspberry Pi shield kit, capable of recording and uploading information about temperature, humidity, air pressure, light levels, UV levels, carbon monoxide, nitrogen dioxide and smoke level to the internet.

Made by Alyssa Dayan and Tom Hartley from Westminster School as an entry to PA Consulting's 2013 Pi-making challenge.

## AirPi



[airpi.es](http://airpi.es)



# Or monitor you plants...

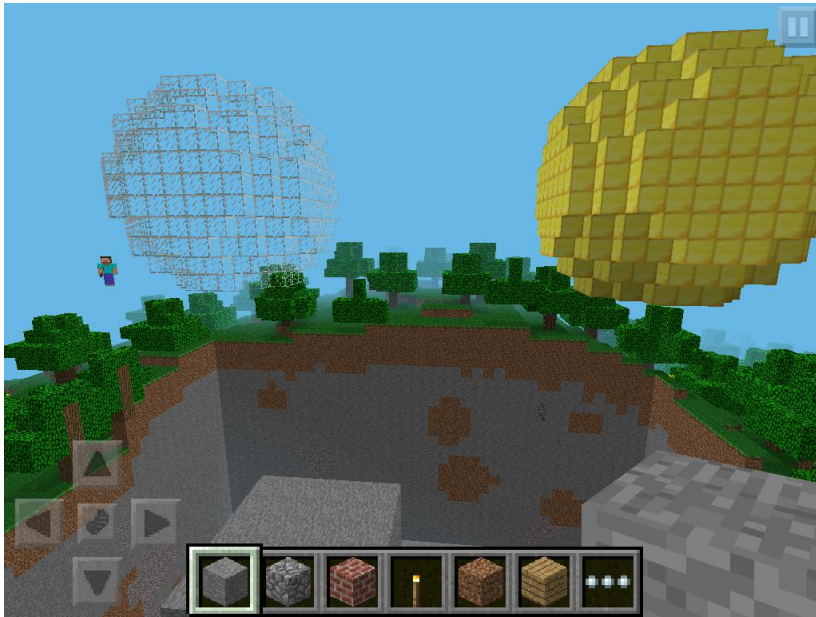


Made by Year 5 of St. Mary's C of E School, Horsham as an entry to PA Consulting's 2014 Pi-making challenge.

[github.com/StMarys-CofE-PrimarySchool/PiWayCode](https://github.com/StMarys-CofE-PrimarySchool/PiWayCode)



# And do clever things in Minecraft!



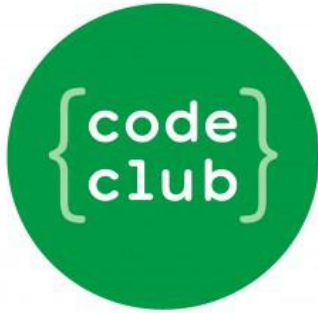
```
import minecraft.minecraft as minecraft
import minecraft.block as block

mc=minecraft.Minecraft.create()
mc.postToChat("Hello, here is your sphere")
radius=6
playerPos=mc.player.getPos()

for x in range(radius*-1,radius):
    for y in range(radius*-1, radius):
        for z in range(radius*-1, radius):
            if x**2 + y**2 + z**2 < radius**2:
                mc.setBlock(playerPos.x+x, playerPos.y+y+radius, playerPos.z-z-10, block.GLASS)
```



Martin O'Hanlon  
[www.stuffaboutcode.com](http://www.stuffaboutcode.com)



[codeclub.org.uk](http://codeclub.org.uk)  
[github.com/codeclub](https://github.com/codeclub)

# piweekly

— Irrational, but well rounded —

[piweekly.net](http://piweekly.net)



[raspberrypi.org.uk](http://raspberrypi.org.uk)



[themagpi.com](http://themagpi.com)

As Babbage has shown...



the sky really is the limit!

# Questions?

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