



William Law CE Primary School

Learning Living Loving Together

# Project Summary





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This is our entry for the Raspberry Pi competition run by PA Consulting to make a difference in the world of sport and leisure.

Here is our project summary on how we created and came up with our table tennis playing robot, Ping-Max.

We began by assembling a team and then came up with some ideas to do with sport and leisure. After sharing all of our ideas we agreed on making Ping-Max (who is currently in training for Wimbledon 2016!)

Ping-Max's main features are his:

Body (papier mache)

Robotic arm (programmed with python)

# Making Ping-Max



1. Firstly, we found a cardboard box and used this to create the shape for Ping-Max's body.
2. Secondly, we used two Pringle tubes for the legs and attached them to the body (without the Pringles in!).
3. Next we blew up a balloon for the head and attached this to the body.

4. Once the Papier Mache had dried we popped the balloon inside it.
5. After that we covered Ping-Max in Papier Mache, this included the body and the empty Pringles tubes.
6. We then added a layer of masking tape (you can never be too sure).
7. Penultimately, we painted the robot.
8. Finally we attached the arm to the body.



# Making the Robotic Arm



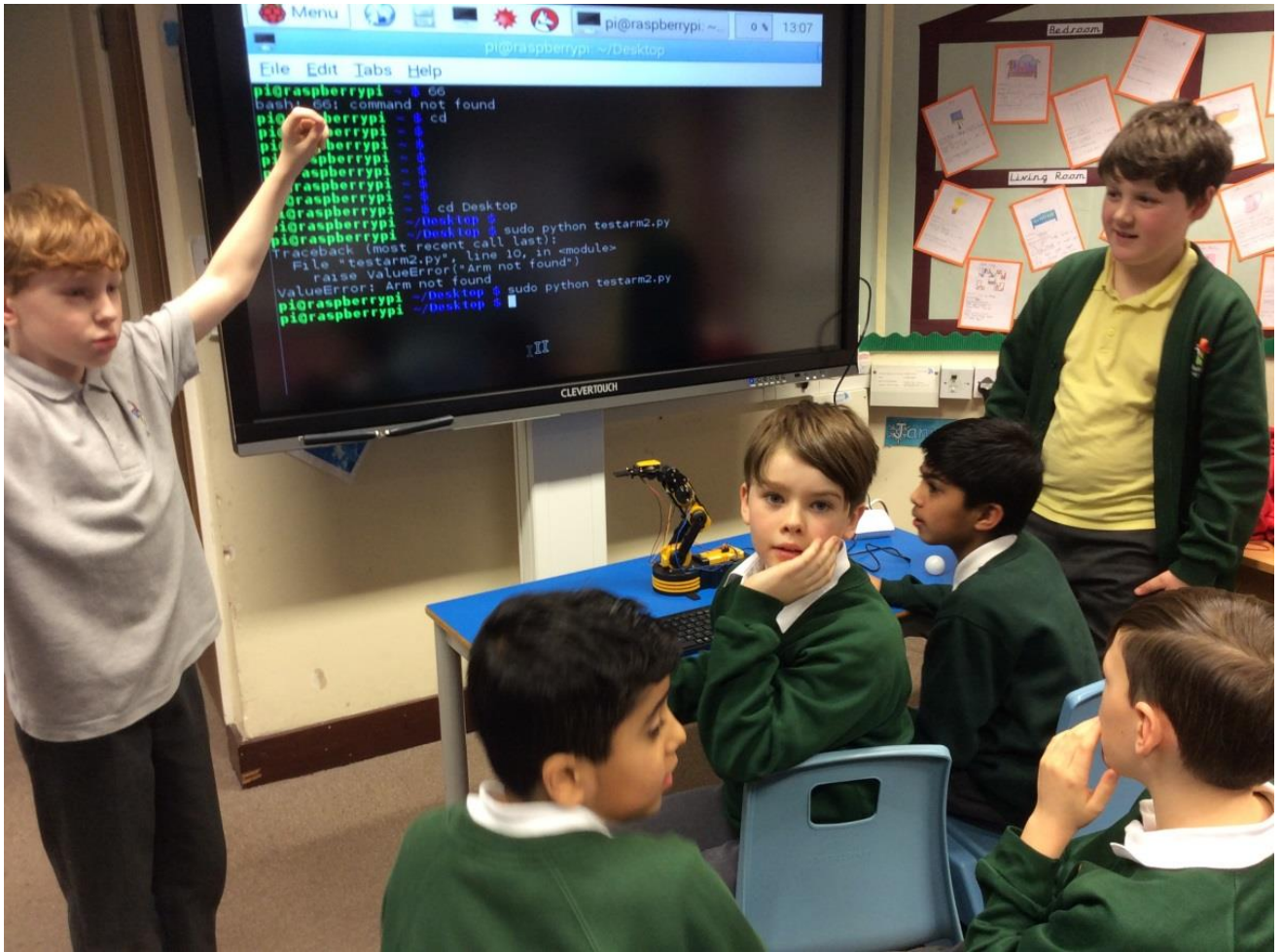
1. We bought a robotic arm and started by assembling it using the user manual.
2. It took many weeks to assemble, this was a tricky job but we persevered.
3. We then had to find a way to control the arm using the Raspberry Pi.
4. We decided to use Python as our programming language.

# Software to control the Robotic Arm



1. First we had to download some software that enabled Python to control the USB port.
2. Next we saved it into the Download Folder.
3. Then we installed this software onto the Raspberry Pi.





3. There was a lot of discussion about how to deal with bugs in the programs.



## How Ping-Max Works

We start by connecting the robotic arm to a Raspberry Pi.

Next open LX Terminal.

Then Change the directory to desktop.

After that turn the arm on.

Finally run the Python program that the arm will follow.

Ping-Max is a competitive table tennis player, with a robotic arm. You can practise your table tennis skills with him and he will never grow tired of training with you.