

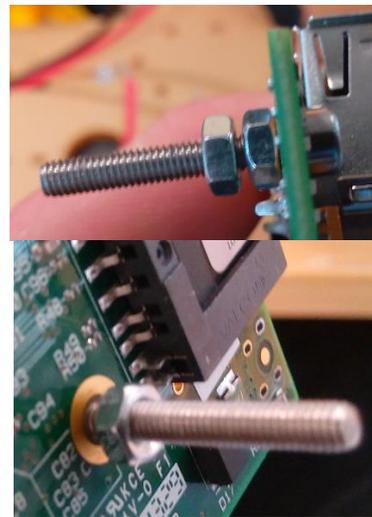
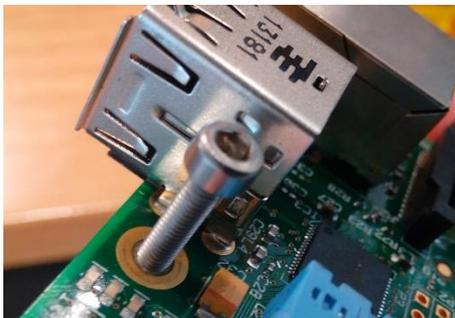
Building PiCart

Building PiCart can be a little fiddly but it's a pretty quick and easy build to complete. You will find the process doesn't match up with the pictures but that's because I built it a really awkward way before deciding on this process.

Working in a two one of you can build the cart and the other can program it, then you can switch, there is a handout for each role.

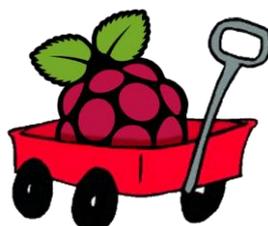
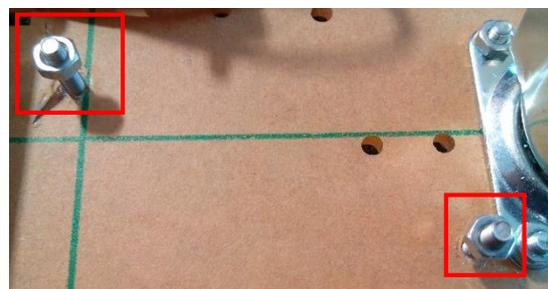
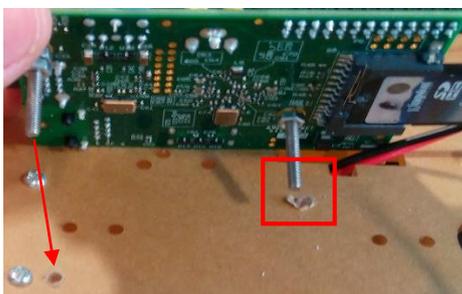
The first thing you want to do is attached the Pi as it only lines up on one side. Put the hex key nuts through the two holes on the Pi, it can be a bit fiddly but wiggle and twist them until they are through.

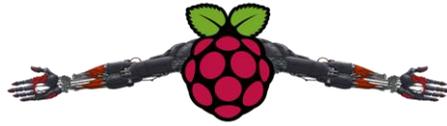
Once you have them both through, screw on two bolts to the front one near the USBs and 1 onto the rear one near the SD port. The two bolts will act as spacers so everything rests a little more level.



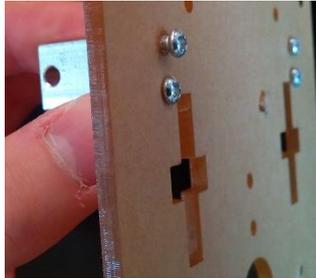
Now line up the Pi on the body and thread the nuts through.

Now using two more nuts, screw them until finger tight underneath the body.

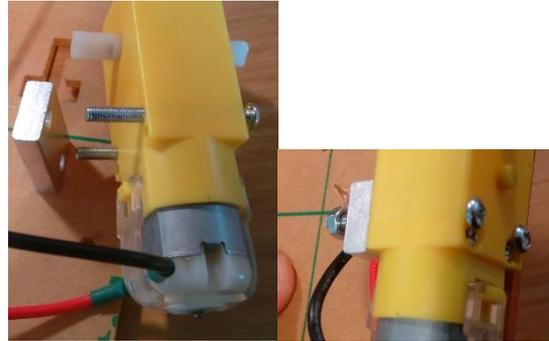




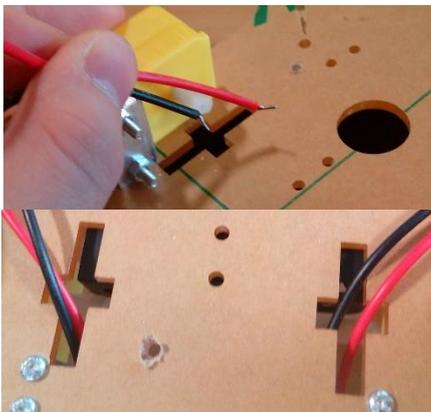
Now next to each of the crosses in the body you should see two holes close together, screw the metal mounts here using the small cross head nuts. Do the same on both sides.



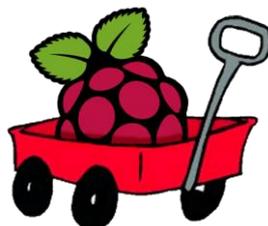
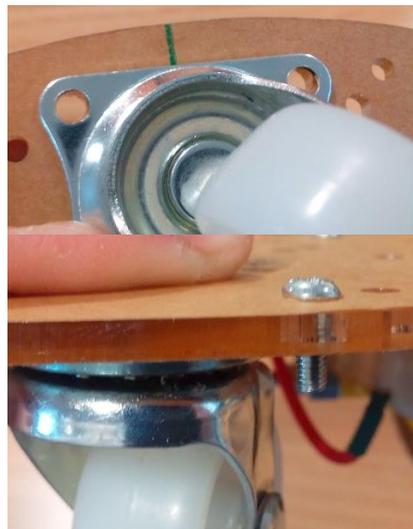
Line up the motors so that the wires face inwards and that the white plastic pieces is just above the cross. Then using the long cross head nuts screw them into place with some bolts. Repeat for both sides.

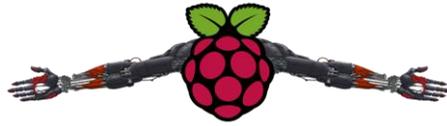


Feed the wires through the crosses to the top of the Cart, you will need them later on.



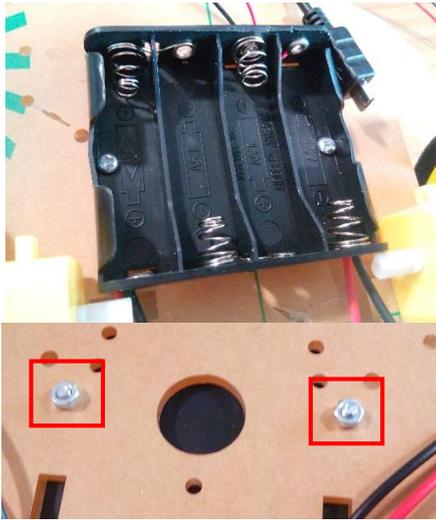
Now line the front dolly wheel up with the two holes in a square at the front. Drop the small cross head nuts through the lined up holes and screw nuts onto them until tight.





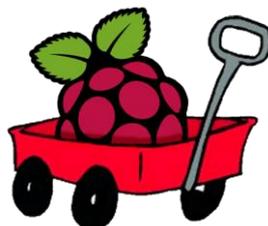
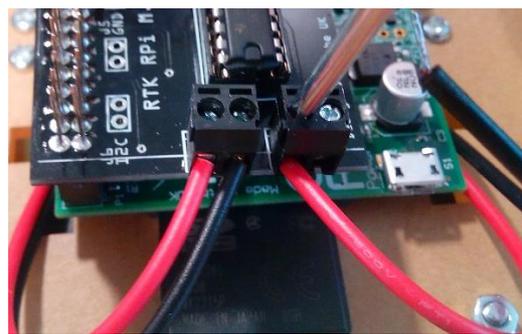
To attached the battery pack, thread two small cross head bolts through the battery compartment holes and line them up with the two holes just behind the motors. Then screw two nuts on top.

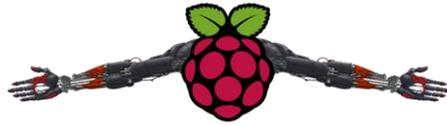
At this stage you may want to put the wheels on so you can work on the top with it being more stable. Just line up the wheels and push them on, remember to support the other side of the motor so you don't damage the mount.



Line up and plug in the motor controller to the Raspberry Pi's GPIO headers.

Now insert the red and black wires from the motors into the motor 1 and 2 ports on the controller. It doesn't matter which way round they are, however if you do them this way it will mean the programmer's handout will work correctly.





Now do the same but for the power leads, these do need to be correct or the board won't work and you could damage it. Red to +, Black to -.

Insert all the batteries... and hope they are charged.



Once you have gotten to this stage, hand the constructed Cart over to your programming partner and they will be able to test their code.

Once tested, unplug the cables to the computer, plug in the power connector and after a short boot up delay the Cart should be off.

