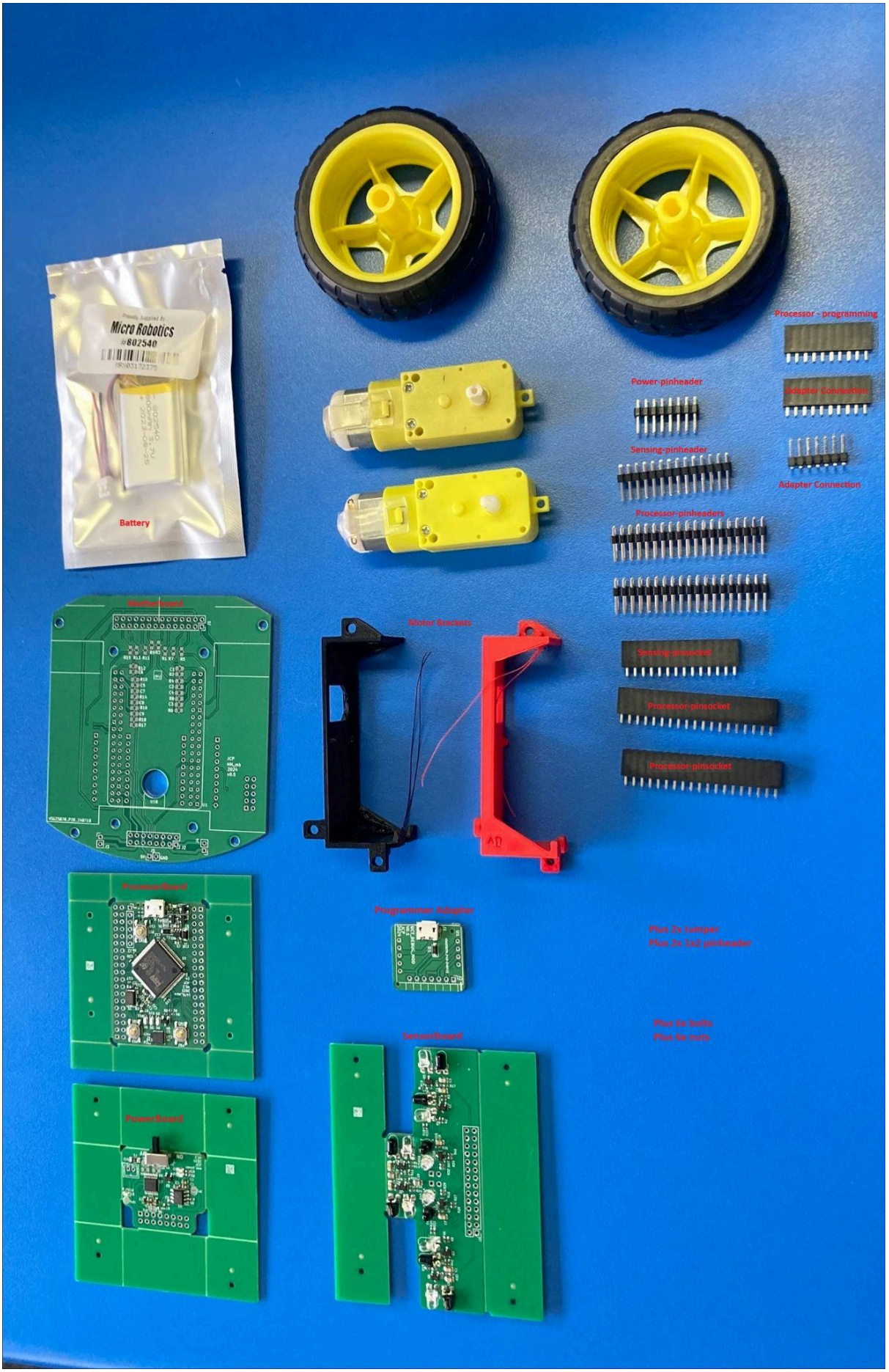
Micromouse Information packet:

You will have received:

Mouse Contents

5x Printed Circuit Boards (Mother, Processor, Power, Sensing, Programming)
Pinheaders (2x **2x19**, 1x **2x14**, 1x **2x08** 1x **1x07** R/A)
Pinsockets (2x **2x19**, 2x **1x10**, 1x **2x14**)
2x Geared DC Motors
2x Wheels
2x Motor brackets (1x L, 1x R)
6x bolts
6x nuts
1x battery + connector

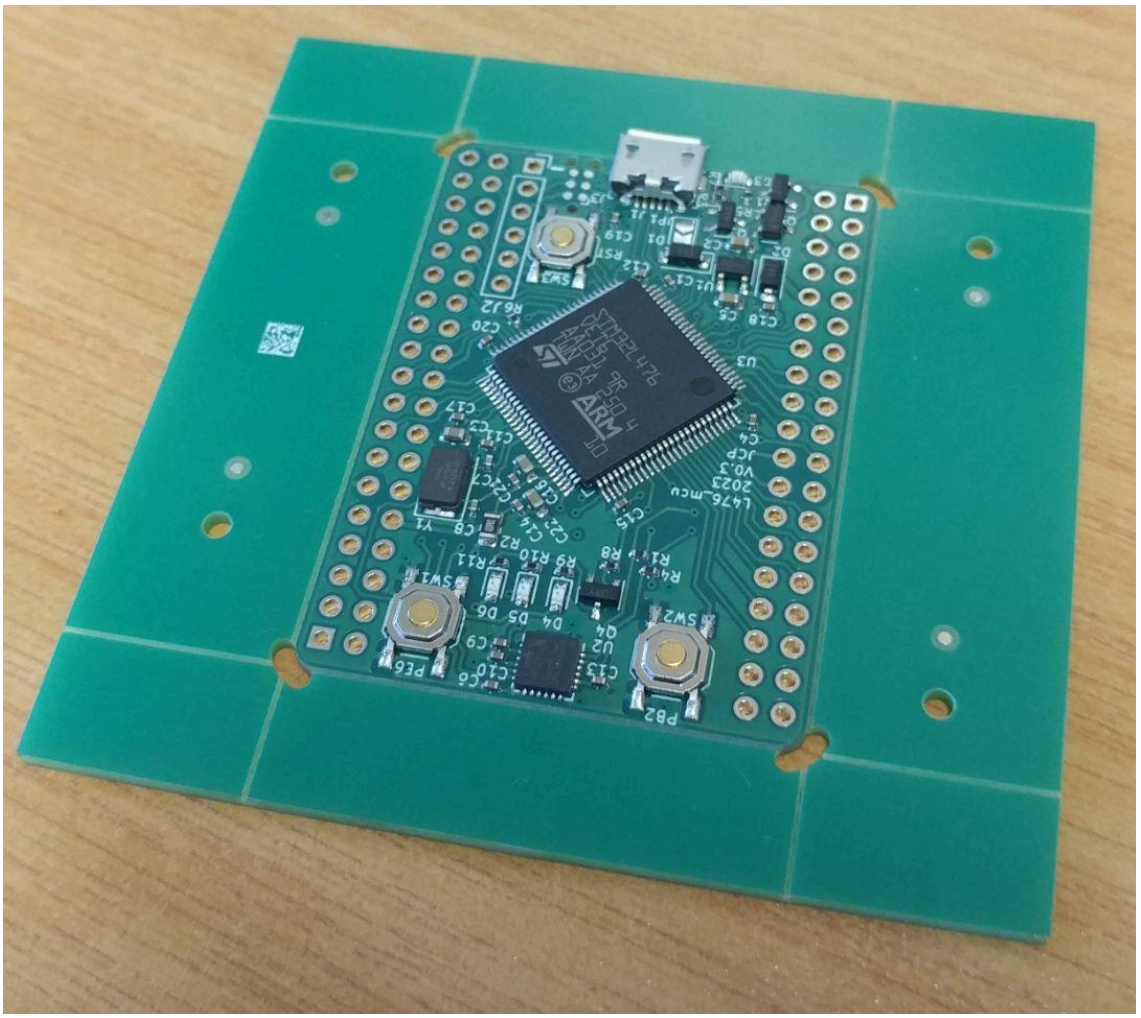

Micro Robotics
#802540
Battery
Motherboard
Processor-Board
PowerBoard
Motor Brackets
Programmer Adapter
SensorBoard
Processor - programming
Power-pinheader
Adapter Connection
Sensing-pinheader
Adapter Connection
Processor-pinheaders
Sensing-pinsocket
Processor-pinsocket
Processor-pinsocket
Plus 2x Jumper
Plus 2x 1x1 pinheader
Plus 6x Bolts
Plus 6x nuts

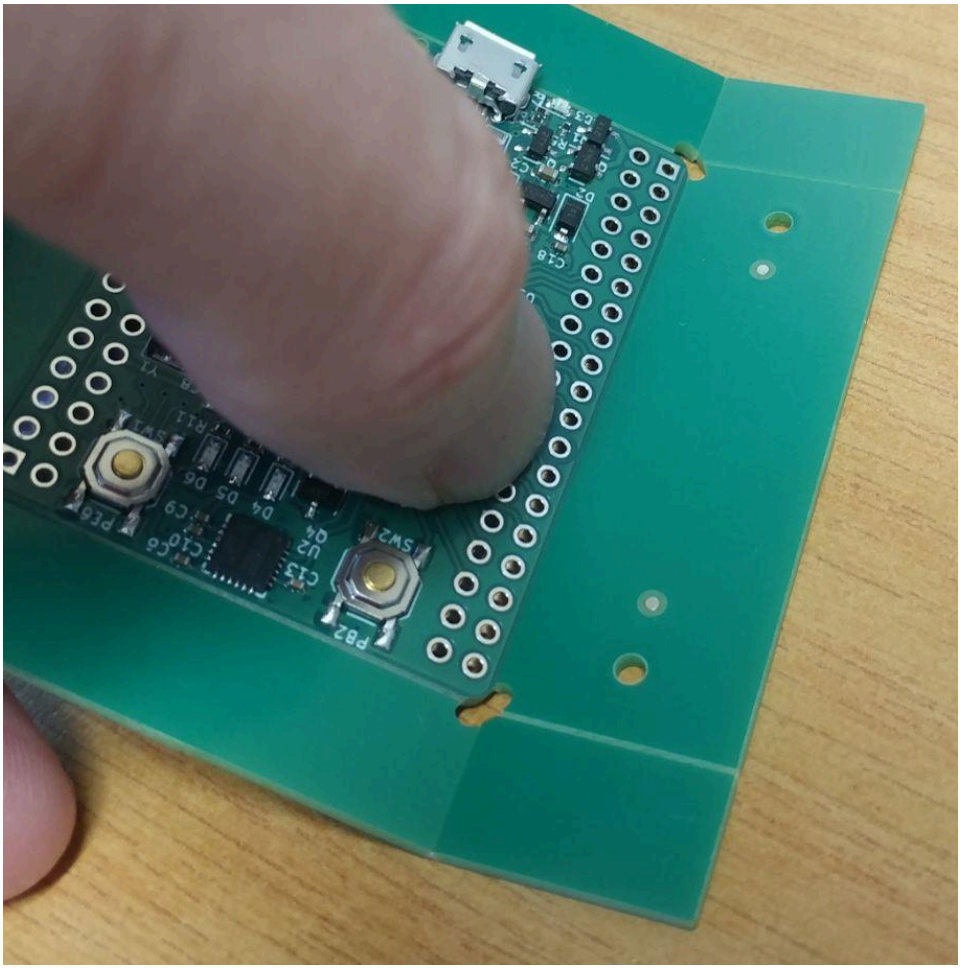
You will need:

Your programmer from your 2nd year STM Board
Soldering Iron
Solder
Some wire

Initial Prep

Each of your boards will have a scored line on them. This is called a V-score and you can just snap off the extra pieces of fibreglass that are not needed.



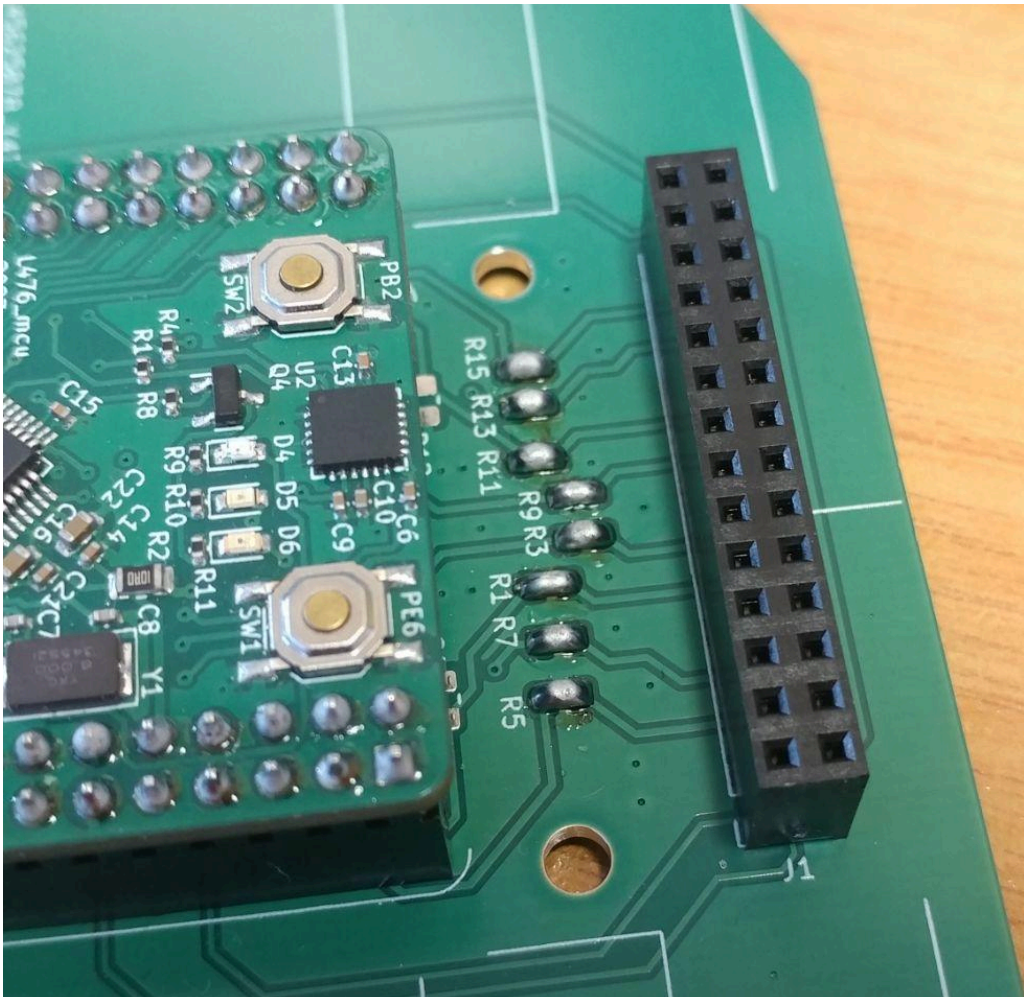


Let's start with the base “aka” the motherboard.

Motherboard

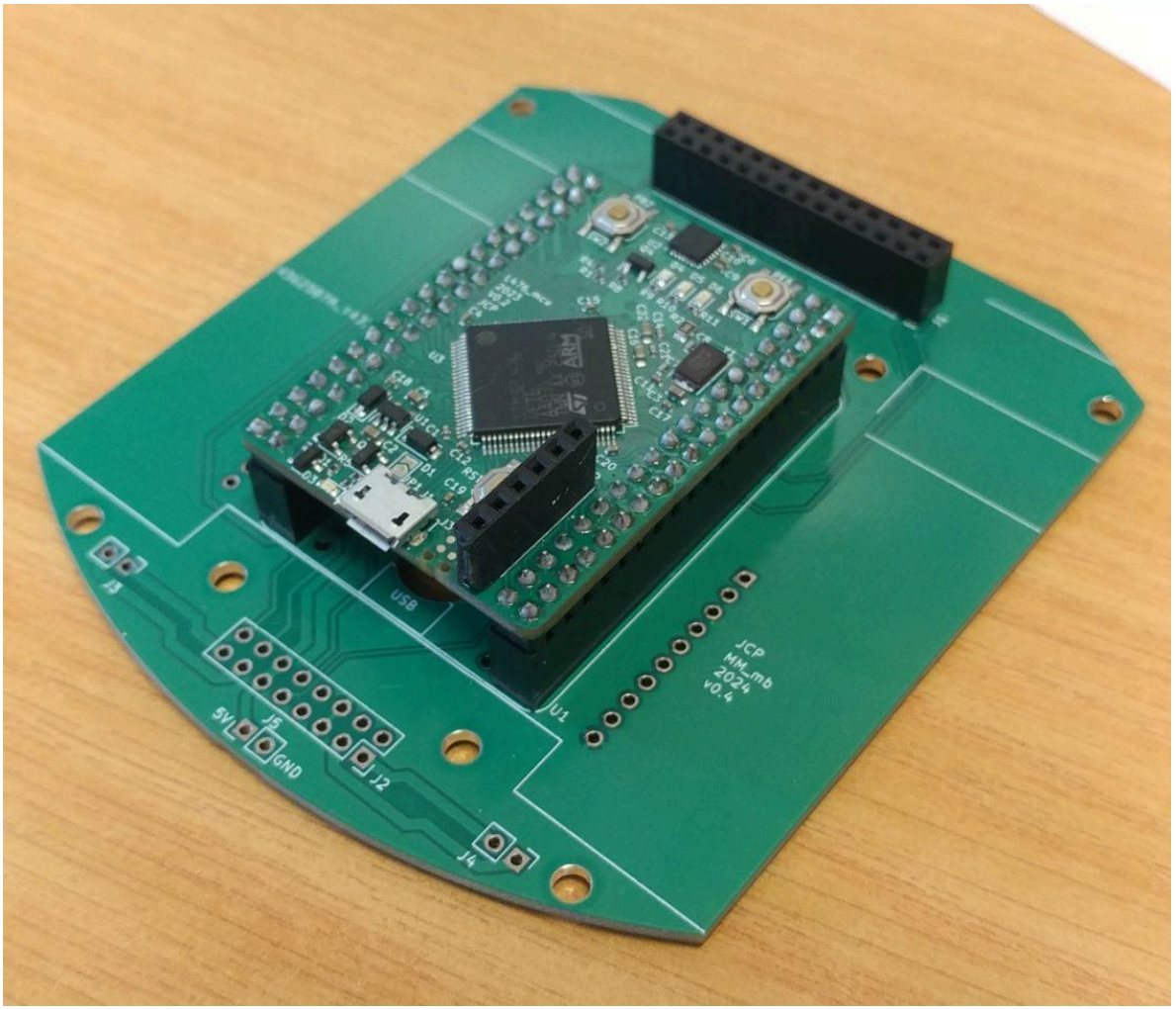
Before soldering the THT components

There are 8 resistors we need to short with solder.



R15, R13, R11, R9, R3, R1, R7, R5

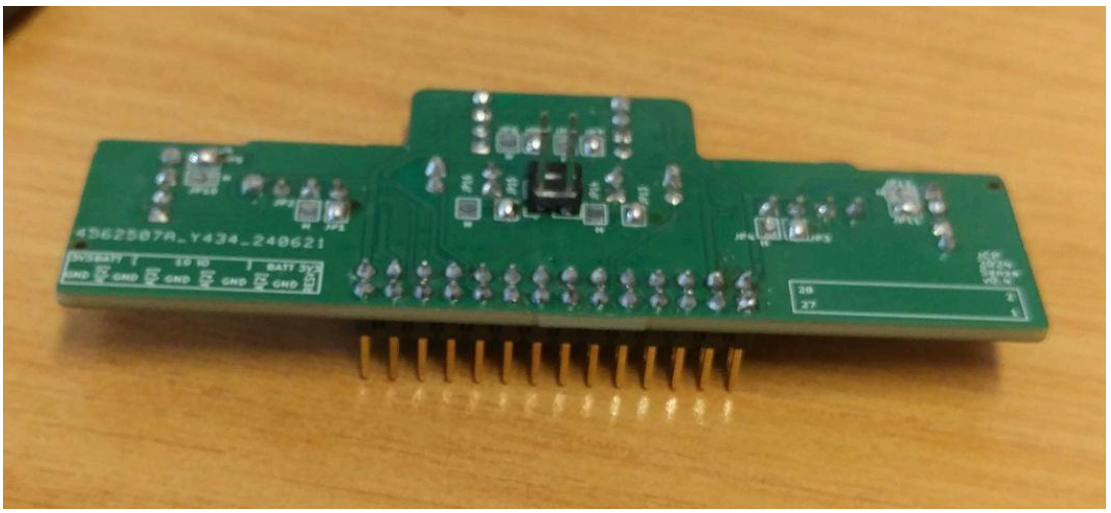
Then if you feeling brave, you can ask Brendon for a SMD capacitor for C9 (10nF or 100nF would be fine)
Now you can solder the THT components;
The Processors 2x 2x19 pinsocket
The Sensorboards 1x 2x14 pinsocket



You still need to mount the motor, but we will do that a little later.

Sensorboard

The sensor board needs jumpers soldered for the LED drive currents
Each jumper pair has an L and an H. We want to solder the L current jumper.
The 2x14 pinheader, **Note:** The board needs to face downward.
The 2x 1x2 pinheaders. These are responsible for the downward LEDs power and signal.

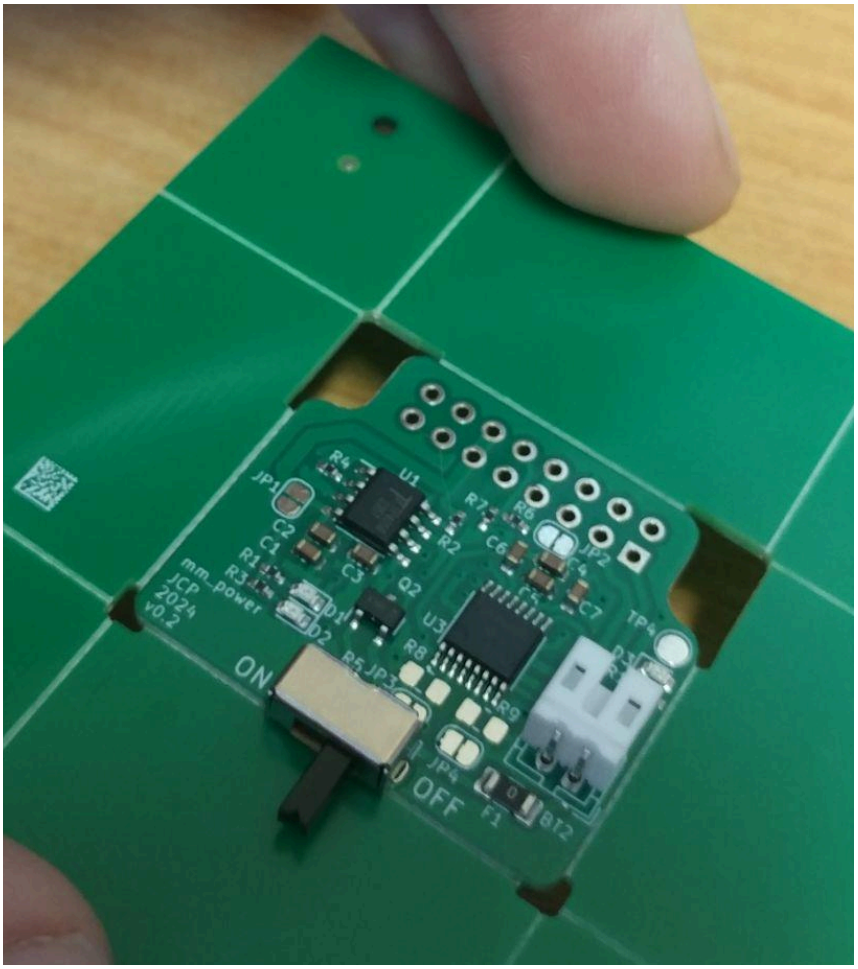


ProcessorBoard

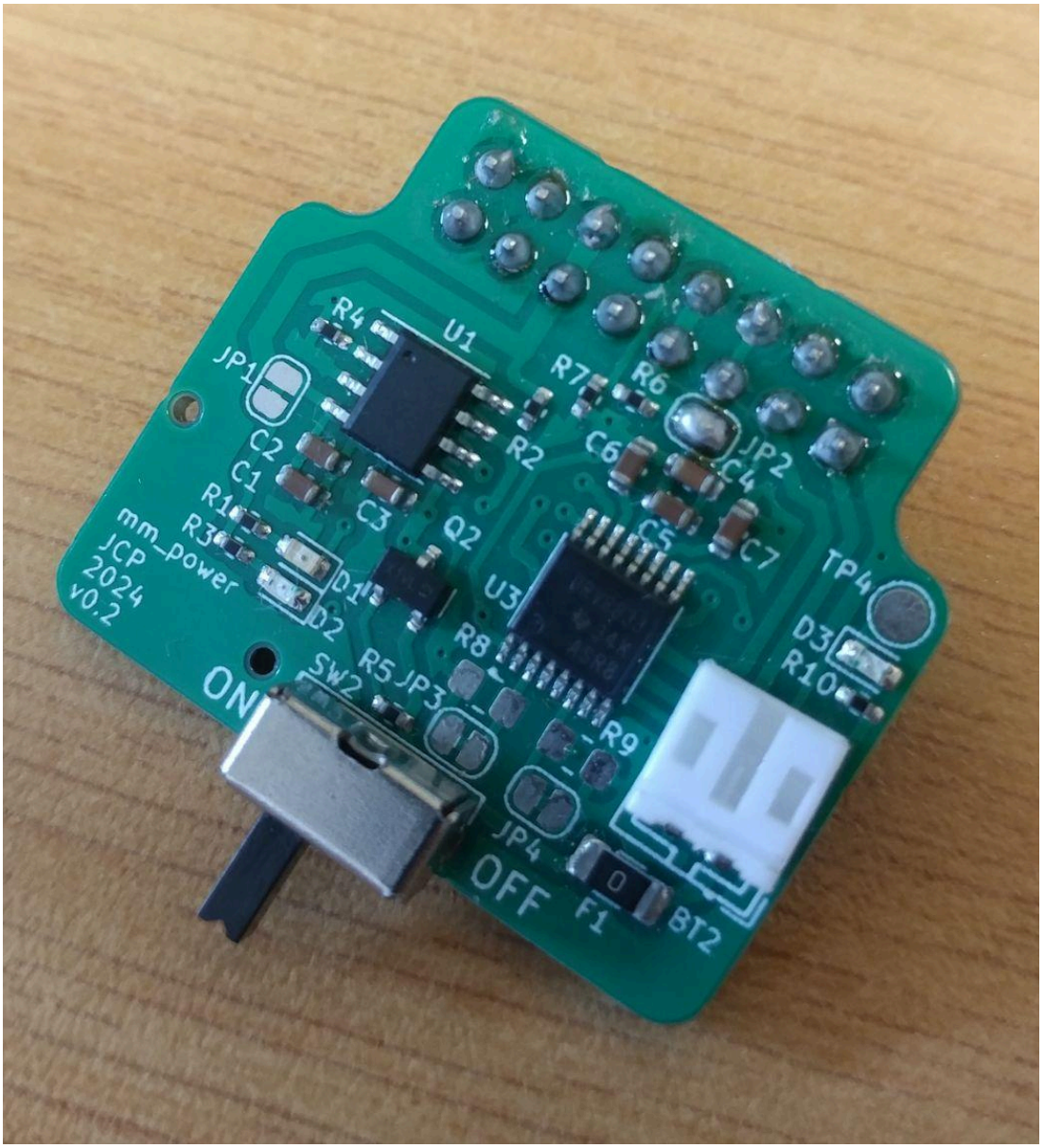
The processor board needs:
Its 2x 2x19 pinheaders soldered
The pinsocket 1x7 for programming

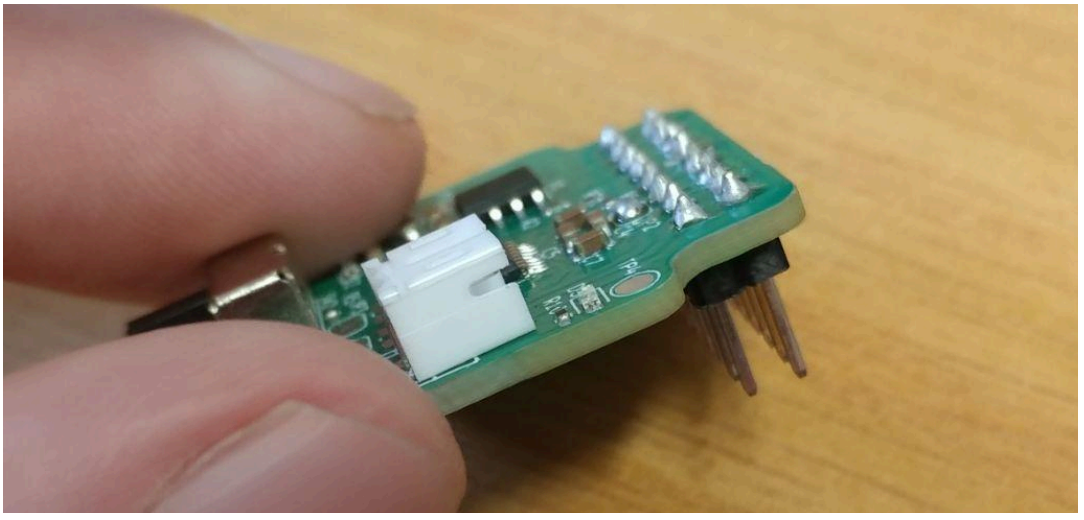
Powerboard

The battery connector - PAY careful attention to polarity…



The powerboard needs to 2x8 pinheader to be soldered onto it.


R4
U1
JP1
R7
R6
C2
R2
C6
JP2
C1
C3
Q2
C4
R1
R3
C5
C7
TP4
mm_power
JCP
2024
v0.2
D1
U3
D2
D3
R8
R10
ON
SW2
R5
JP3
R9
JP4
OFF
F1
BT2



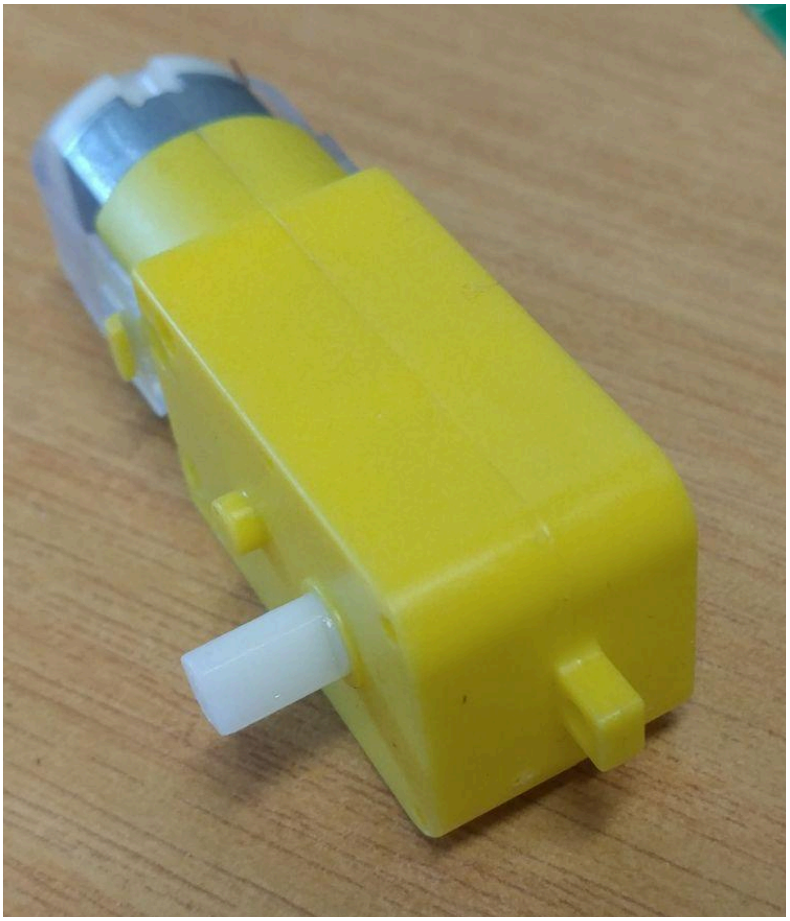
Programmer

Break the pinsocket pieces to fit the programmer you need to cut it into 2 pieces 1x4 and 1x5 similar to what you did in your 2nd year STM kit.

Solder the R/A pinheader
Solder the pin sockets
Insert the Programmer

Assembly

Cut the top off the motors

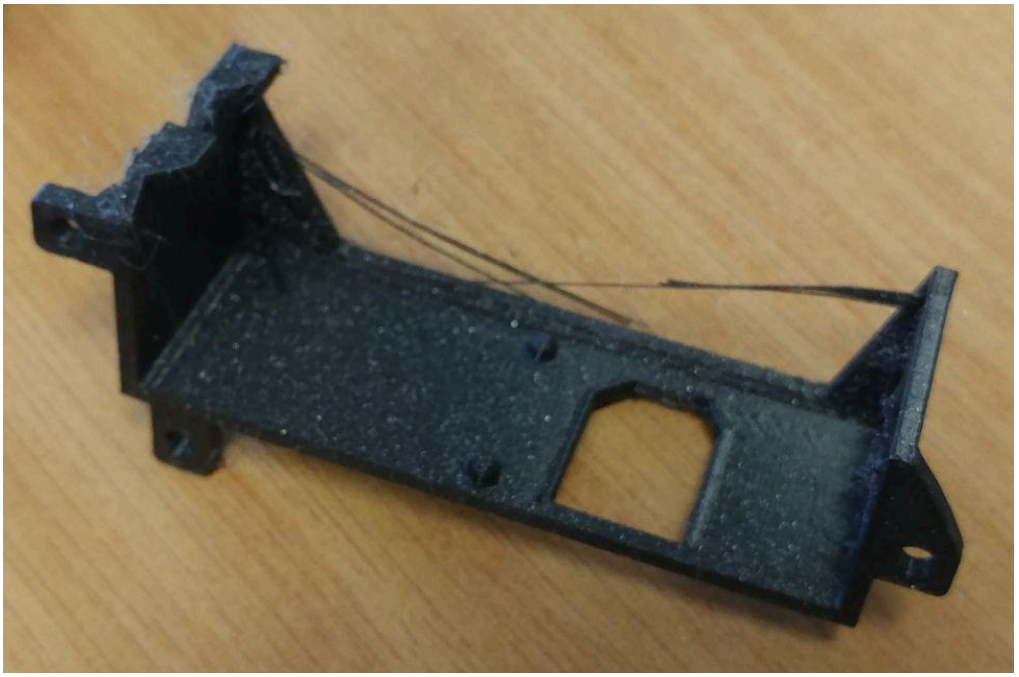


Before the motor cutout

After the motor cutaway

Clean the brackets

Remove the whiskers from the 3D prints and remove burrs



Solder wires to motors

Only 200mA - so I wouldnt worry about thickness

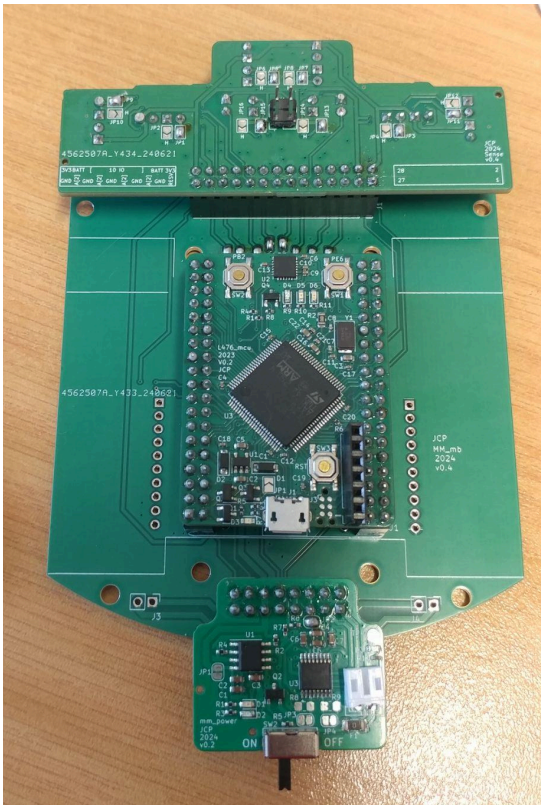
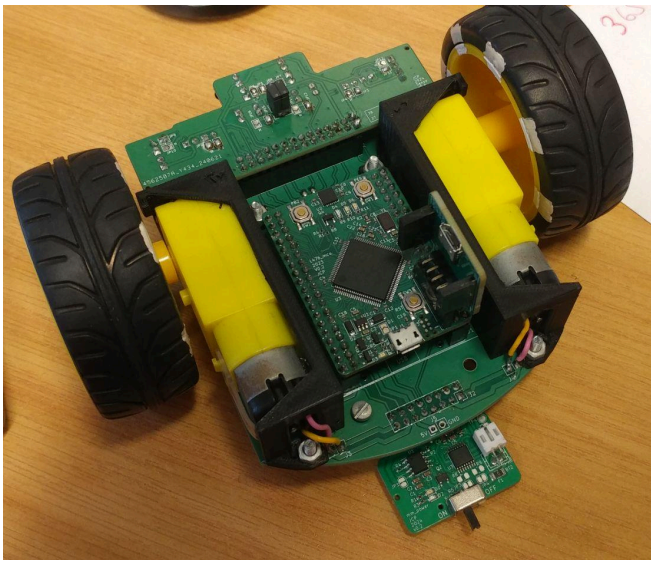
Insert motors into the bracket

Solder wires onto motherboard

Connect the Motors to the Motherboard.

Solder the power board onto the robot.

Plug in battery

Program the mouse

Finished Images