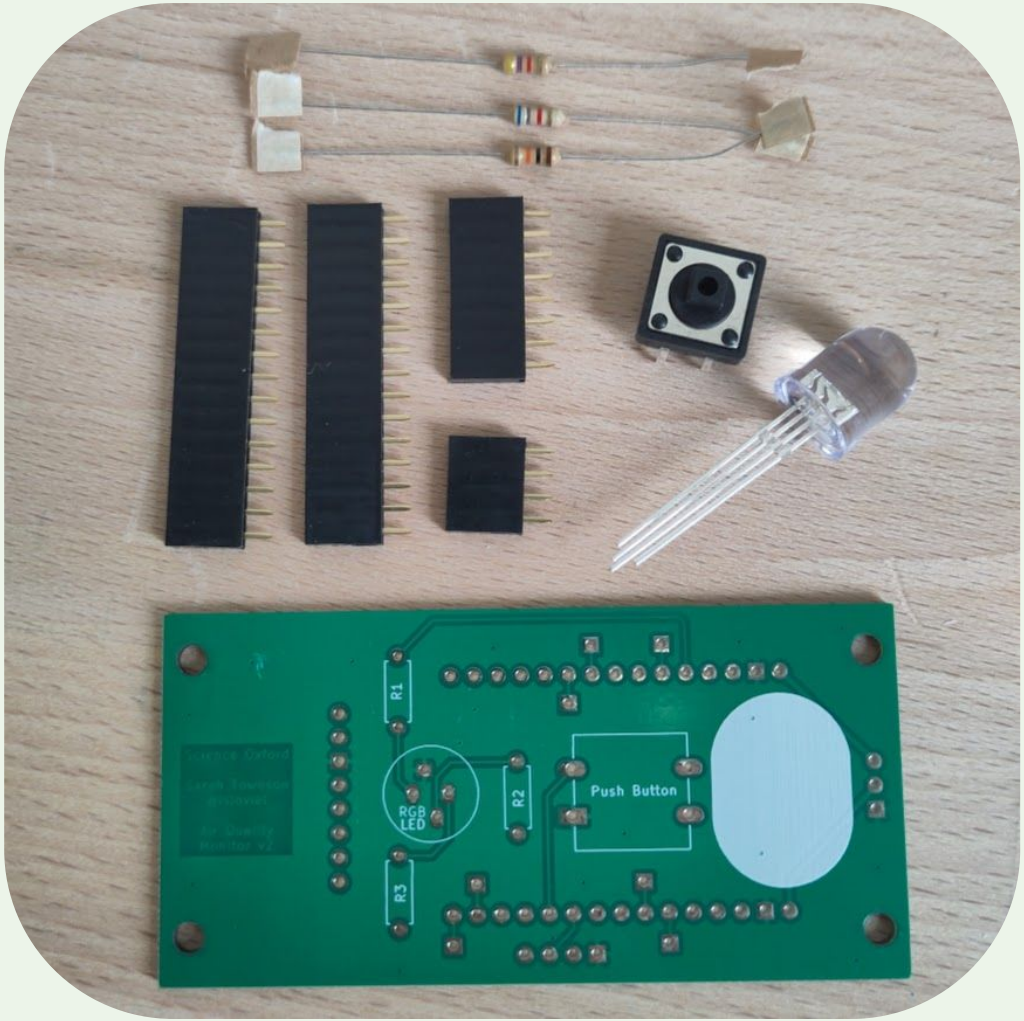
STEP 1

Check that you have all of the components you need.
A text list is on the next page.



STEP 1

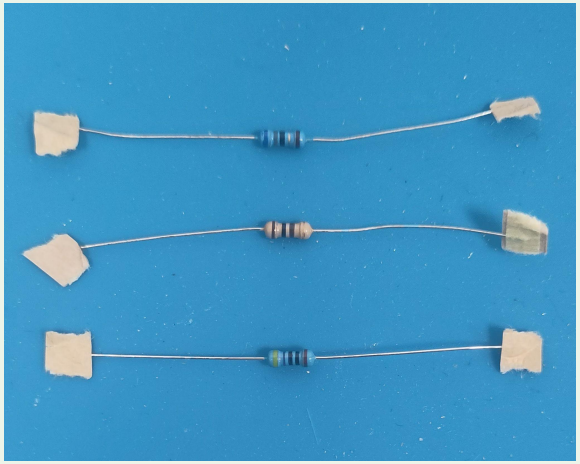
Check that you have all of the components.

A picture list is on the previous page.

- ❑ Printed circuit board
- ❑ Resistors (3)
  - ❑ 47KΩ
  - ❑ 10KΩ
  - ❑ 68KΩ
- ❑ Pushbutton
- ❑ RGB LED
- ❑ 15-pin header (2)
- ❑ 8-pin header
- ❑ 4-pin header

Other components (don't solder these):

- ❑ ESP32
- ❑ Sensor
- ❑ LCD screen
- ❑ LCD cable
- ❑ Button top
- ❑ Heat sink



Your resistors do not have labels - work out which is which from the colours.

Resistor Calculator

STEP 2

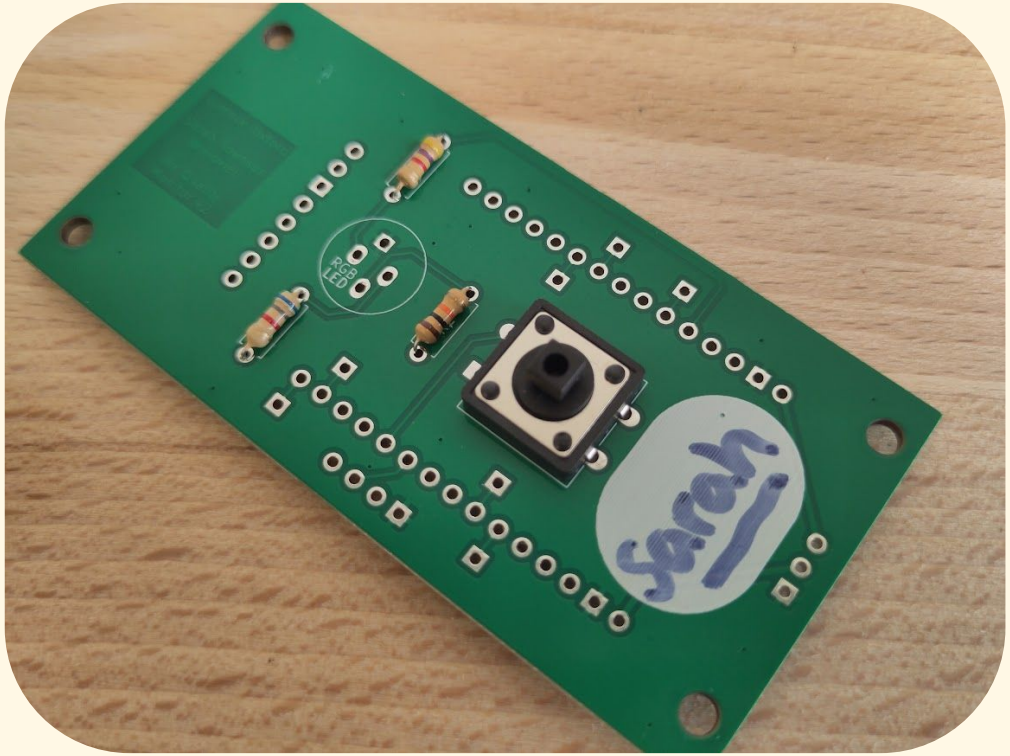
- ❏ Write your name on the white space with a marker.

STEP 3

- ❏ Solder the three resistors.
  - ❏ 47KΩ resistor to the space labelled **R1**
  - ❏ 10KΩ resistor to the space labelled **R2**
  - ❏ 68KΩ resistor to the space labelled **R3**

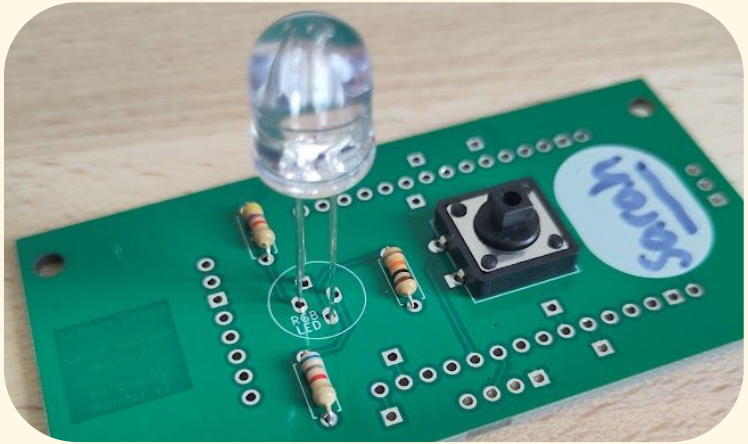
STEP 4

- ❏ Solder the push button.



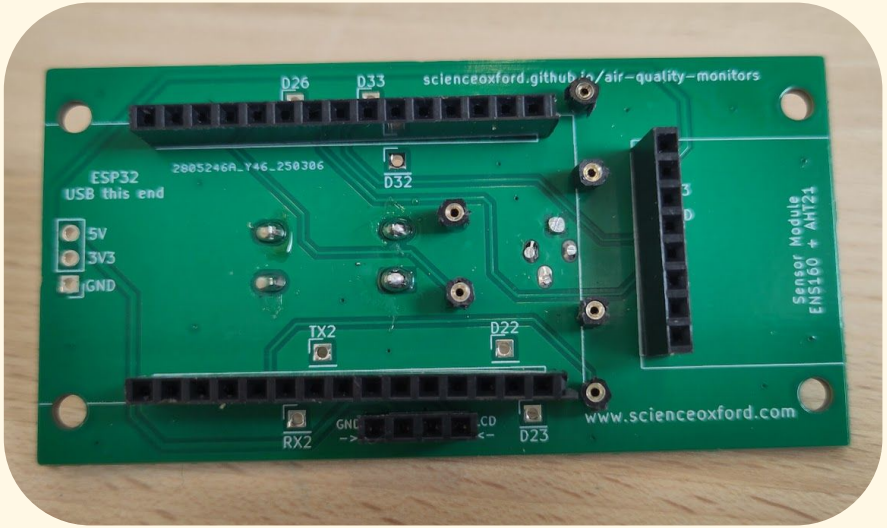
STEP 5

- ❏ Find up your RGB LED and identify the **negative** leg - this is the longest one
- ❏ The **negative** leg will go in the **square** hole on the board - gently bend the legs so that you can add it.



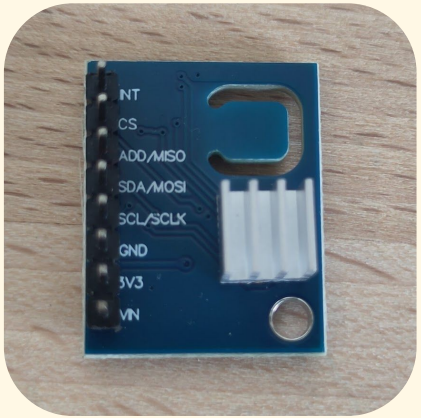
STEP 6

- ❏ Turn your board over, and place the pin headers into their spaces. They must be on the opposite side of the board to the other components.
- ❏ Secure them with blue tack if needed, and solder them into position.



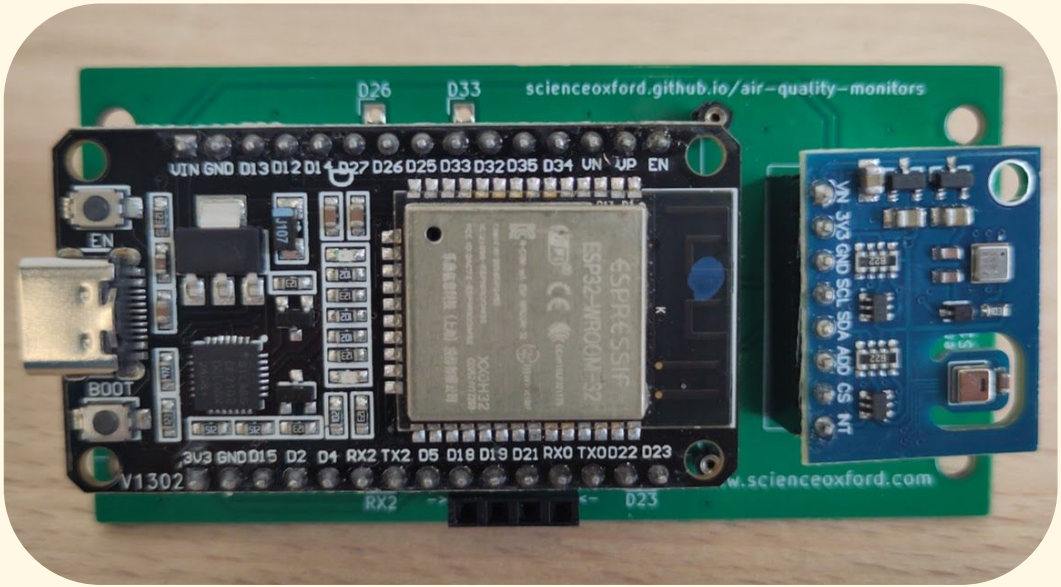
STEP 7

- ❏ Find your sensor and the heat sink.
- ❏ Peel the plastic off the bottom of the heat sink, and stick it onto the sensor in the place shown in the picture →
- ❏ Push the sensor into the pin headers on the board, lining it up with the outline.



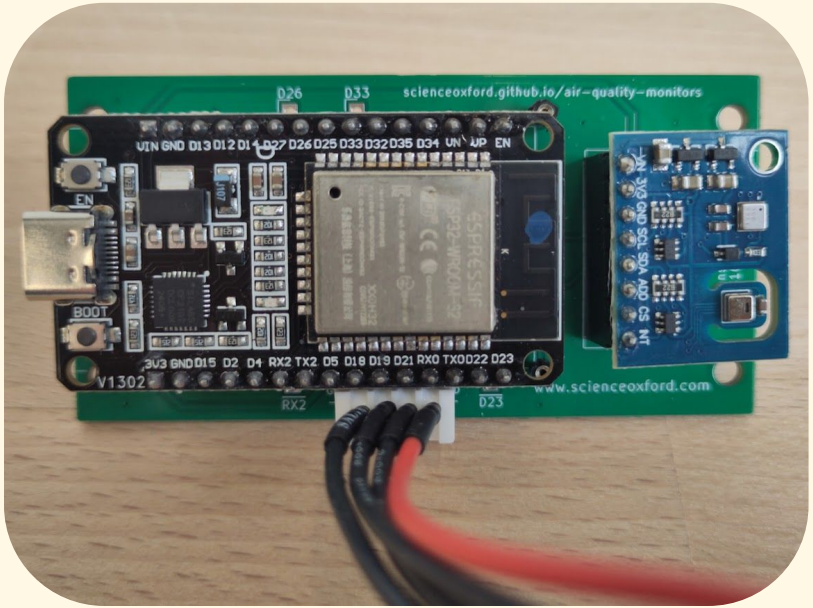
STEP 8

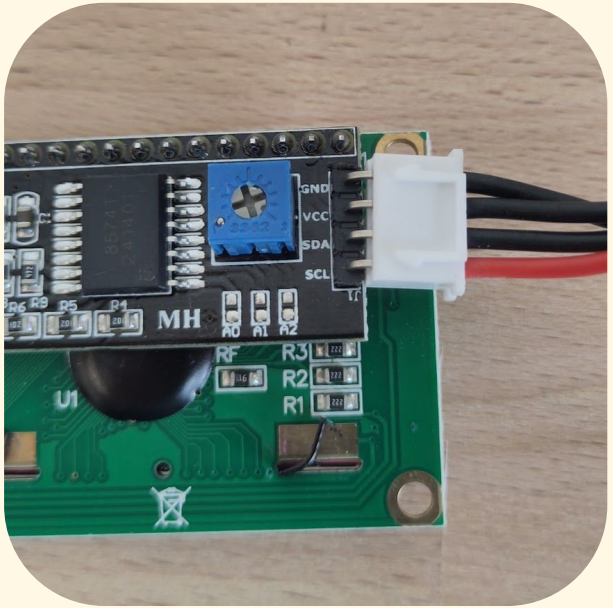
- ❏ Find your ESP32.
- ❏ Push it into the pin headers on the board, lining it up with the outline.
- ❏ The USB connector should be on the edge of the circuit board.



STEP 9

- ❏ Connect one end of the LCD cable into the final 4-pin header on the board.
- ❏ It will only fit one way round.
- ❏ Connect the other end to you LCD screen, so that the **red wire** connects to the **SCL** pin.





Your board is almost ready to be connected to power!

A workshop leader will check your soldering *- if there is a short circuit, components can get damaged, so it is safest to troubleshoot* ***before*** *connecting it to power.*

Once it has been checked, plug it into a computer and run your test code.

If your board and all of the components work as expected, assemble your Air Quality Monitor.

You will need:

- ❏ Your laser-cut design
- ❏ Nuts and bolts
- ❏ Screwdriver
- ❏ (Optional) paints or markers for decorating