

Water Depth	Absolute pressure (approx.)	Gauge pressure
Surface	1bar	0bar
10m	2bar	1bar
20m	3bar	2bar
30m	4bar	3bar

Your pressure sensor

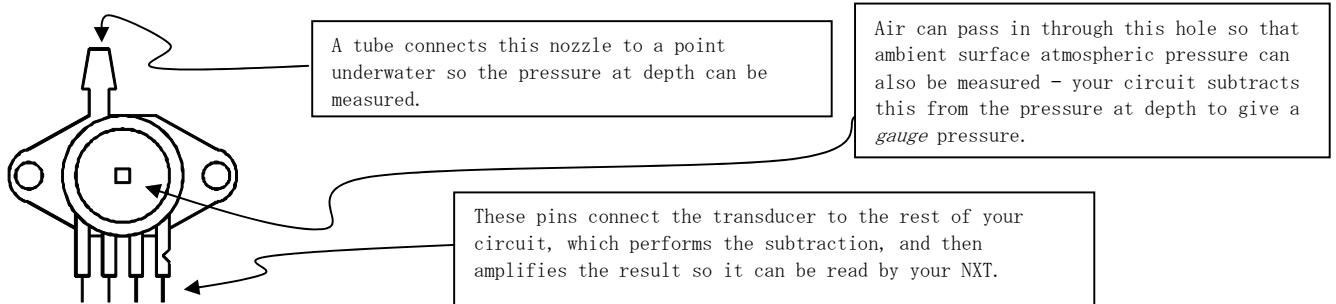
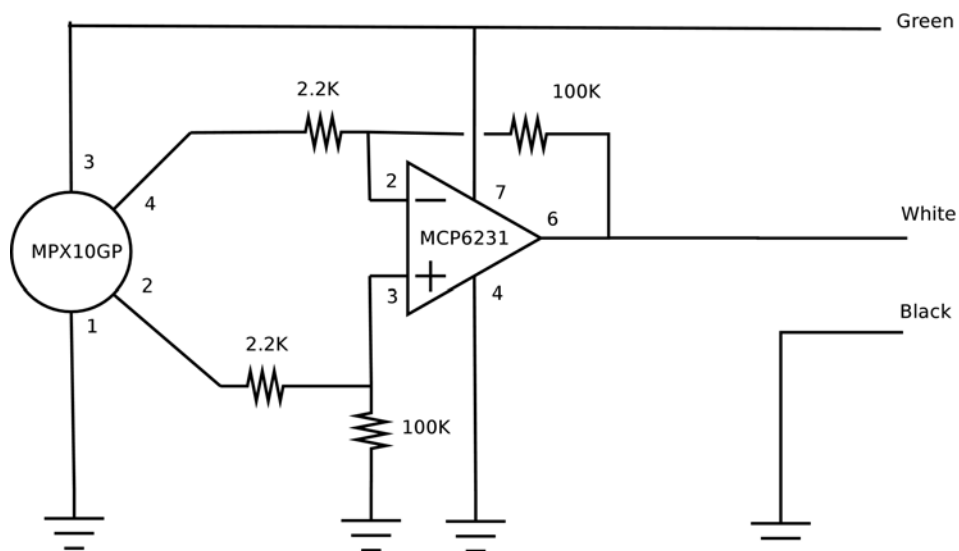
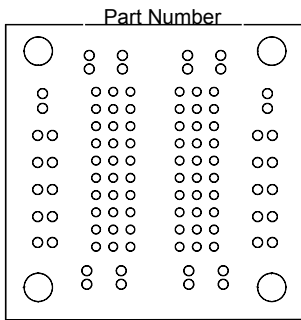


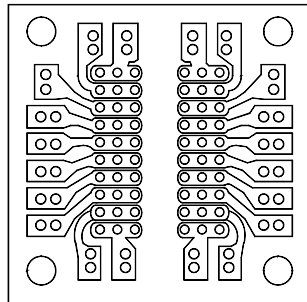
Figure 1. The differential pressure transducer that will form the main component of your pressure sensing circuit.



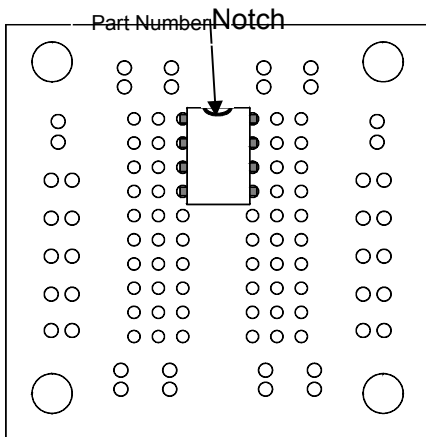
Procedure



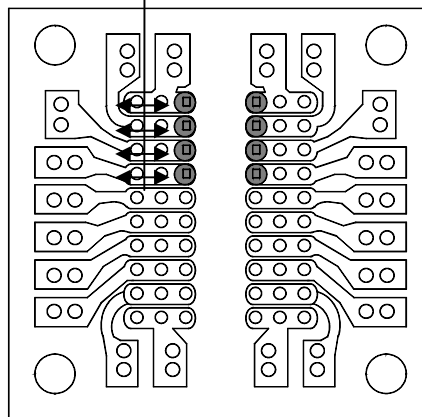
Top – plastic with holes



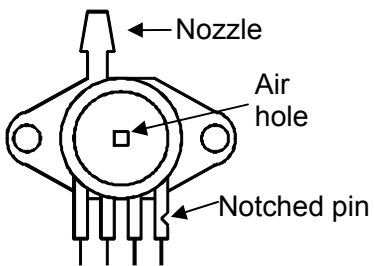
Bottom – copper connections and holes



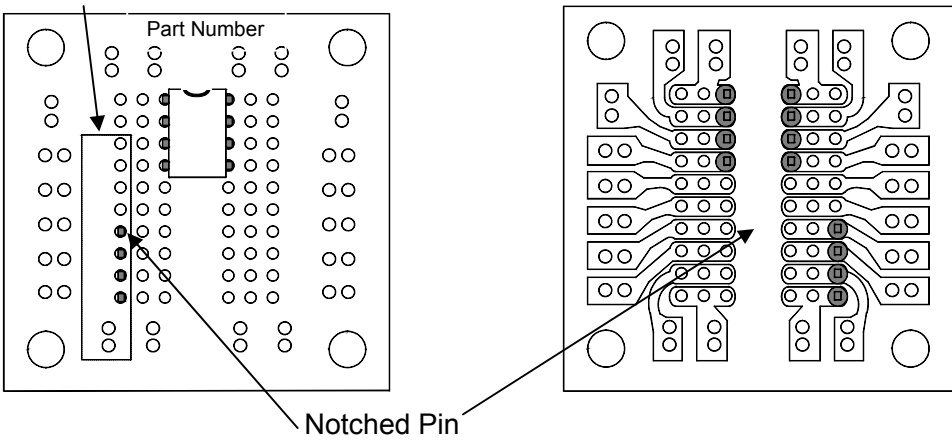
Solder the pins onto the bottom of the board



Part 2 - Soldering the pressure transducer to the board



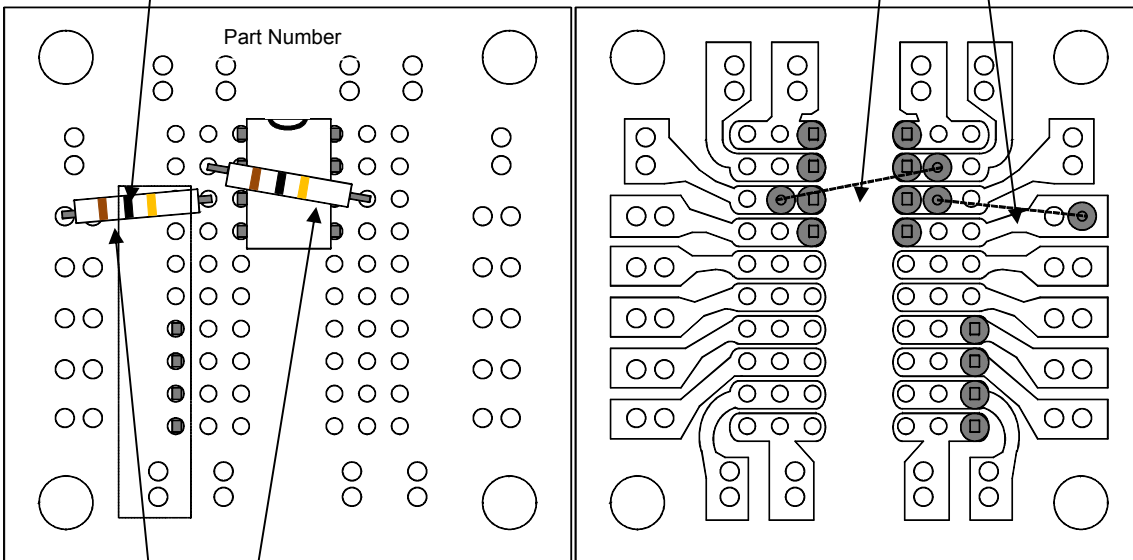
Top profile of pressure transducer
Pressure Sensor



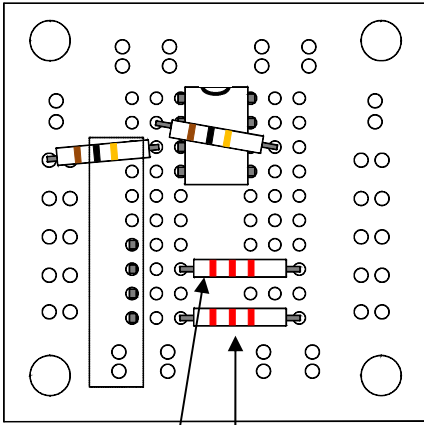
Part 3 - Soldering the resistors to the board

Pull this resistor tight to board (under pressure transducer)

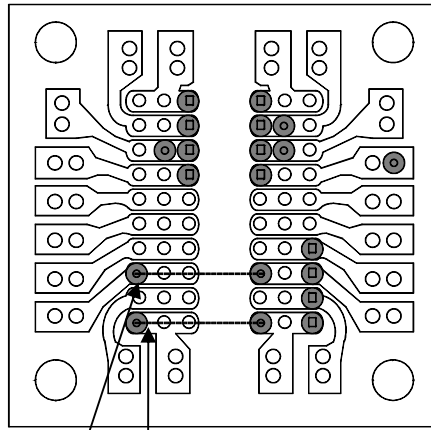
Dashed lines represent the newly placed 100 kΩ resistors on the opposite side of the board



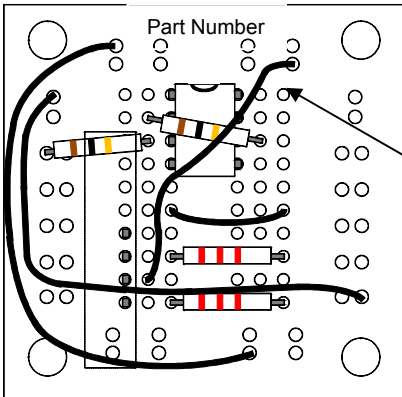
Part Number



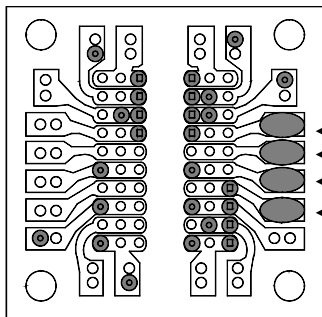
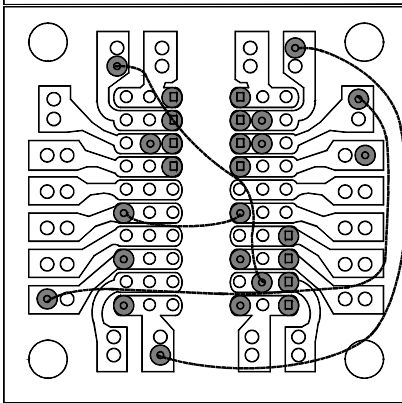
2.2 kΩ resistors



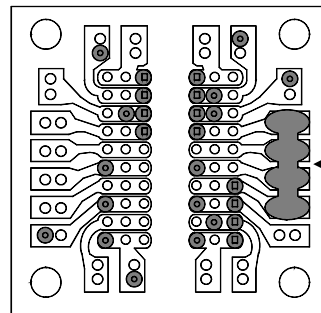
2.2 kΩ resistors in bottom of board



Hook-up wire
(4 pieces total)



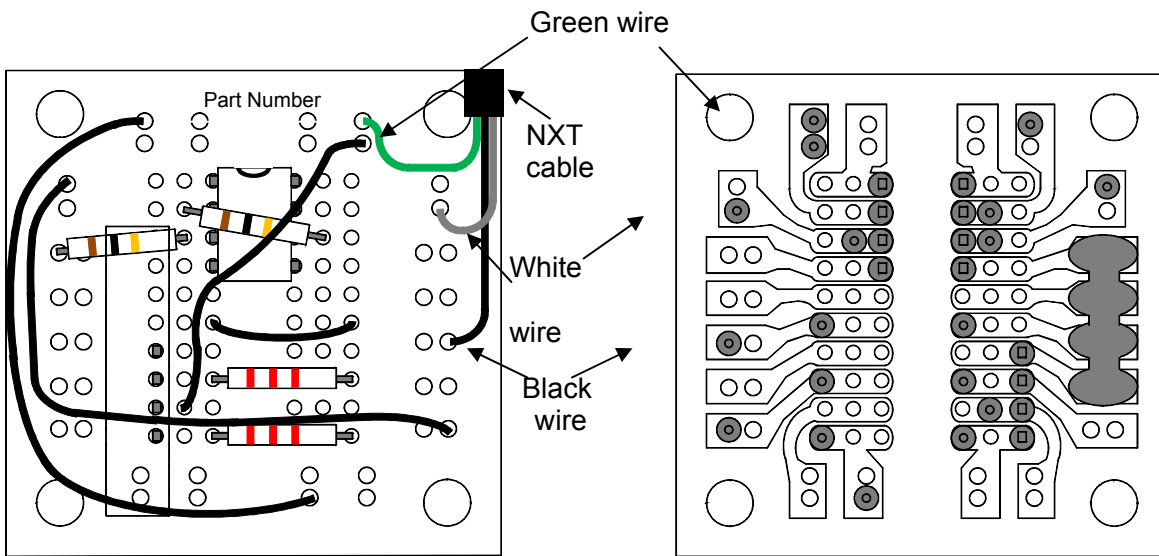
First add big beads
of solder to these
four pads

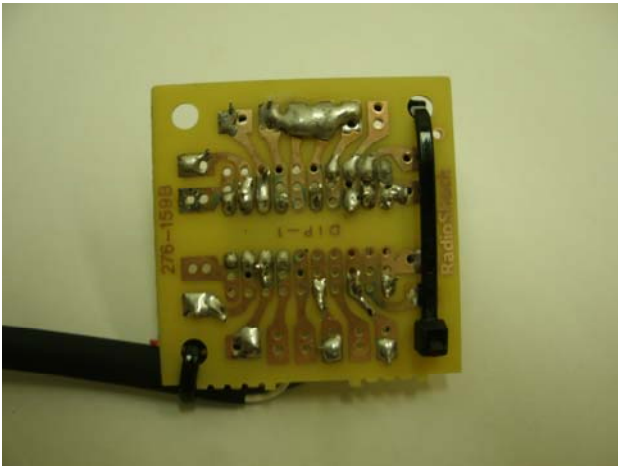


Use the soldering
iron to drag the
beads together.

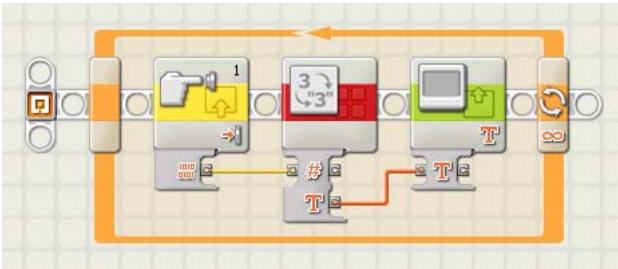
Pressure Sensor

Part 4 - Connecting the NXT cable to the board





Part 5 – Creating the NXT program



Touch Sensor

Port: 1 2 3 4

Action: Pressed Released Bumped

Reset

Number to Text

Number:

Display

Action:

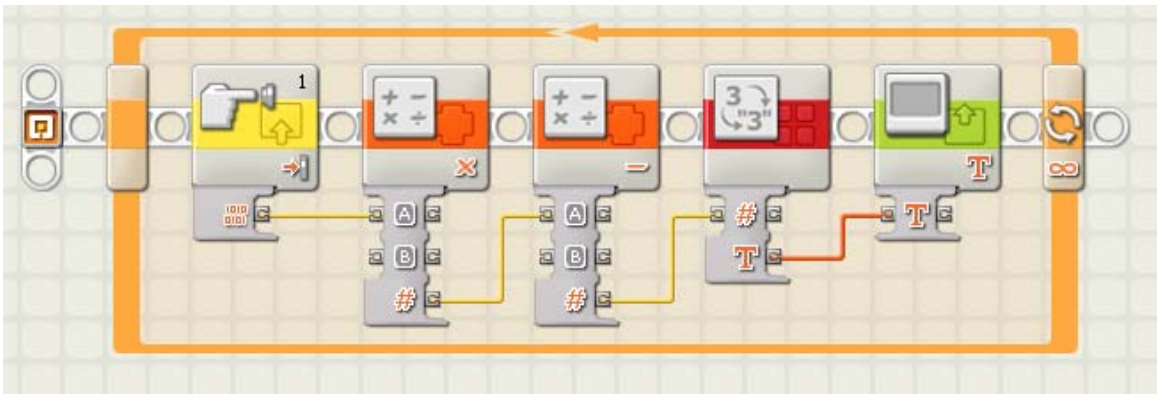
Display: Clear

Text:

Position: X Y

Line:

Update the NXT program to convert the NXT raw data reading to a depth reading by adding two math blocks.



The image shows two 'Math' blocks from the Scratch script. The top block is set to 'Multiplication' with input A set to 0 and input B set to 0.35. The bottom block is set to 'Subtraction' with input A set to 0 and input B set to 71.

This is the value that calculated for m from your graph

This is the value that calculated for b from your graph