

# Prong : A soil moisture sensor for the BBC micro:bit

www.kitronik.co.uk/5647



**Introduction:** Prong is a sensor board that can be directly mounted to a BBC micro:bit to monitor the moisture present in soil. The two conductive tines are placed into the soil. Any water or moisture in the soil will conduct to give an analogue voltage that can be read by the BBC micro:bit.

## Power Supply:

Prong is powered from the 3V supply of the BBC micro:bit. Use either the USB or JST connector on the BBC micro:bit to power the circuit. Prong and the BBC micro:bit can also be powered from the Mi:Power board ([www.kitronik.co.uk/5610-V2](http://www.kitronik.co.uk/5610-V2)) to create a compact stand alone unit.

## Voltage signal:

To determine the moisture level, the signal is brought out to Pin 1 on the BBC micro:bit as an analogue voltage. The voltage will range between 0V (dry) and 3V (wet).

## Connecting a BBC micro:bit:

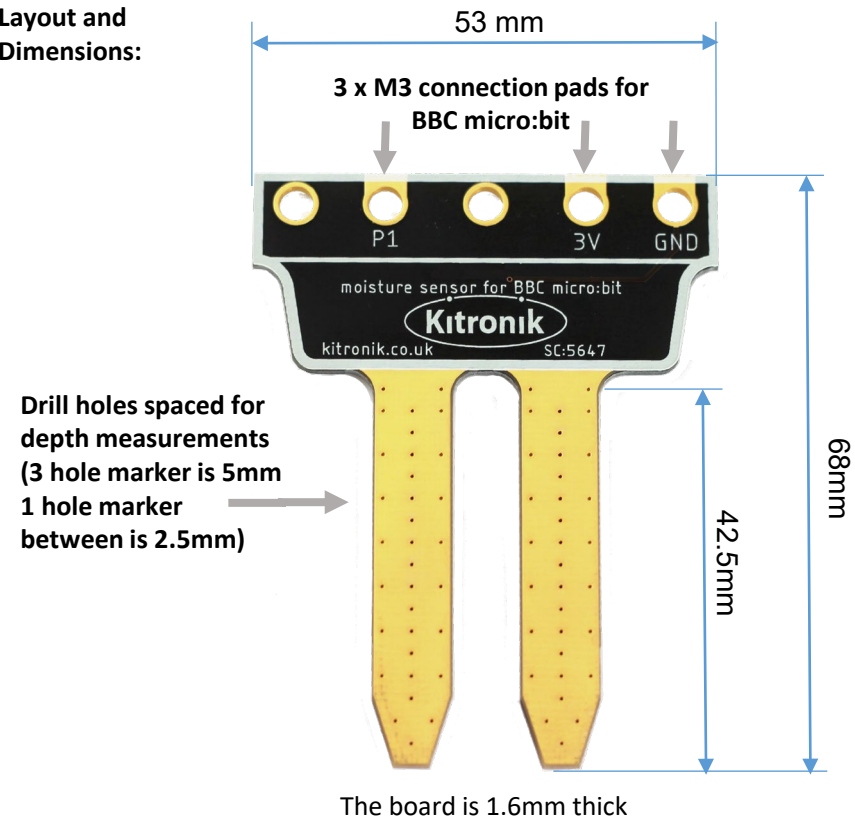
The board has been designed so that the BBC micro:bit can be bolted on using 3 x M3 nuts and 3 x M3 screws. Place the screws through the P1, 3V and GND holes of the PCB and BBC micro:bit, then use the M3 nuts to fasten together on the back of BBC micro:bit.

Alternatively croc-clips can be used to connect between the Prong and the BBC micro:bit.

If using the Mi:Power board then additionally connecting P0 means the BBC micro:bit can sound an alarm if the soil becomes too dry.



## Layout and Dimensions:



## Software:

This simple example shows a happy face when the soil is damp, and a sad face when it is dry. The pause is used to space readings out.

