



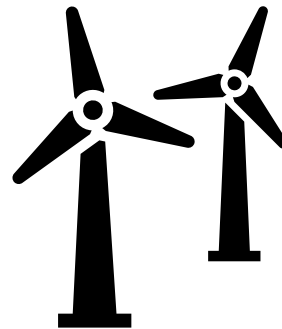
# Advanced Micro:bit Workshop



LEAVING CERTIFICATE  
COMPUTER SCIENCE

# Session 2

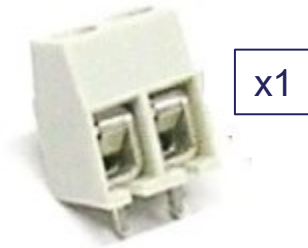
## Wind Power Challenge



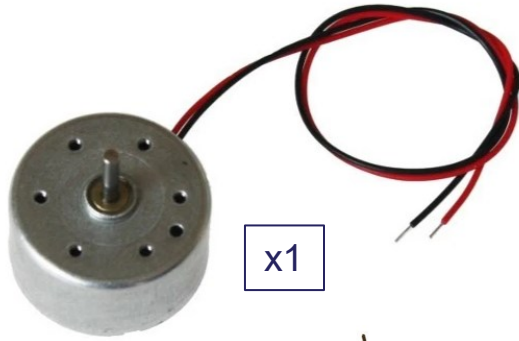
# Aim

- To generate a voltage by blowing on a fan blade to spin a motor.
- Read the voltage using an analog input pin on the BBC micro:bit
- Keep track of the highest reading

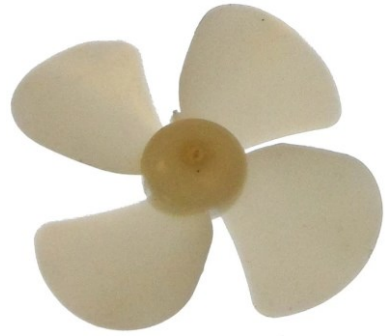
# Components



x1



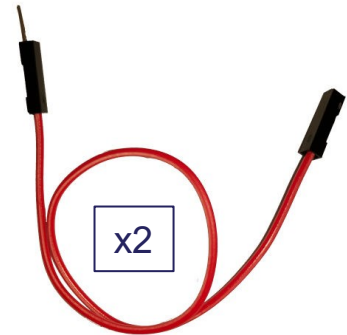
x1



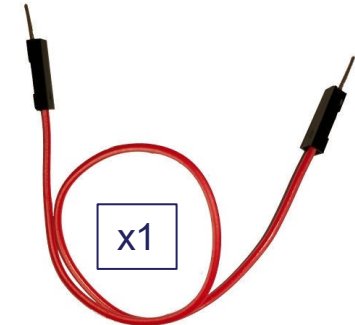
x1



x2

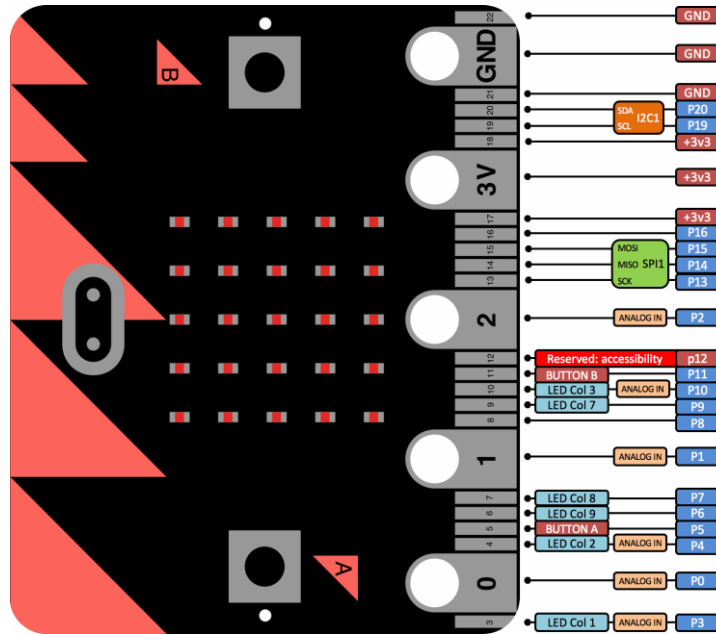


x2

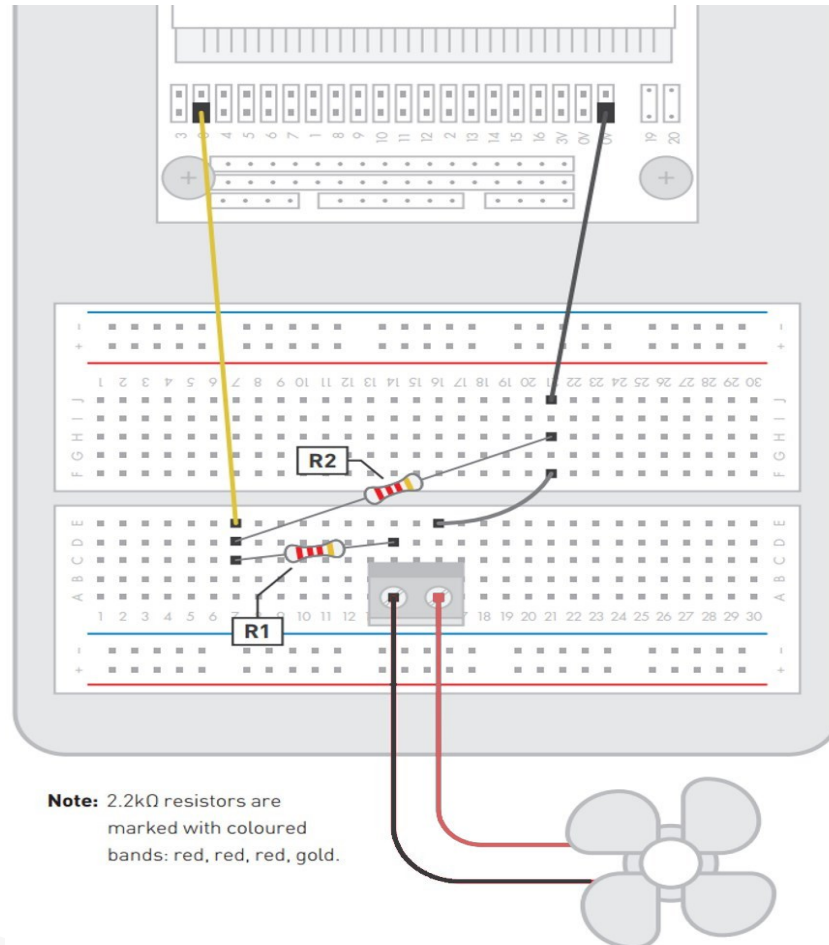


x1

# Breakout Board/Breadboard



# Wiring Diagram



**Note:** 2.2k $\Omega$  resistors are marked with coloured bands: red, red, red, gold.

# Stretch break



# Instructions

## Step 1 – Code and test in simulator

- Read the voltage via the analogue input pin on the micro:bit.
- Keep track of the highest value read.
- Display the highest value on button press.

## Step 2 – Wire up the physical micro:bit

- Using the wiring diagram as a guide, connect the physical micro:bit to the breadboard to complete the learning activity. 😊

## Extension activity

- Wire up an LED and get it to turn on and off based on the wind speed generated.



# Breakout Activity



## Stretch break



# Solution

```
forever
  set value to analog read pin P0
  if value > highest then
    set highest to value
```

```
on button A pressed
  show number highest
```

# Analysing the data



```

VOLTS:2.19941348973607
Wind power.highest:1023
Wind power.value:750
volts:2.19941348973607
Wind power.highest:1023
Wind power.value:750
volts:2.19941348973607
  
```

# Reflection

