

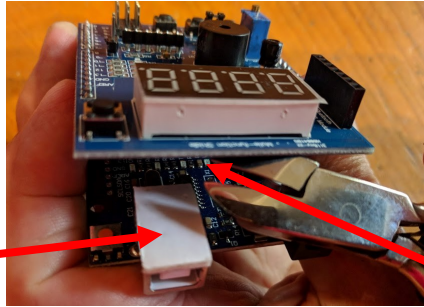
7 Simple & Easy, Fun Activities with your Arduino Uno R3 - Multi Function Shield (MFS)

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For Scorpio Technology

Note- We are using the Hailangniao V2 Multi Function Shield.

It piggy backs on top of the Arduino Uno R3

Cover the top of the Uno USB connector with insulating material ie double sided tape.



CAUTION - Before starting, ensure you trim / insulate any legs on the MFS, that may short with the top of the UNO USB connector.

Following are 7 Simple and Easy, Fun Activities using a Multi Function Shield on your Arduino Uno R3. You can find these and many other Sketch Code examples to try, under Hailangniao / V2 Multi Function Shield, on the internet. These examples assume you are familiar with and have the free Arduino IDE installed with the required Libraries on your computer.

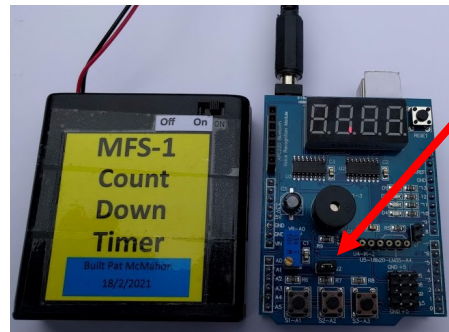
NOTE-Switch on the slide switch on the battery pack to start each example, turning it off after trying each one.

MFS 1 - Count Down Timer and Buzzer Alarm

Components to Add— Nil

How it Works—

- Pushing Button 3 increments in 10 Second lots.
- Pushing Button 2 increments in 1 Minute lots.
- A short Push on Button 1 starts or stops the Count Down, the Buzzer will Beep 3 Times when the time is up.
- A longer Push on Button 1 resets the counter to 0.



Jumper Pin on J2

1 2 3

MFS 2 - Temperature Sensor (using DS18B20)

Components to Add—DS18B20

- Left Gnd, Centre A4, Right +5v

How it Works —

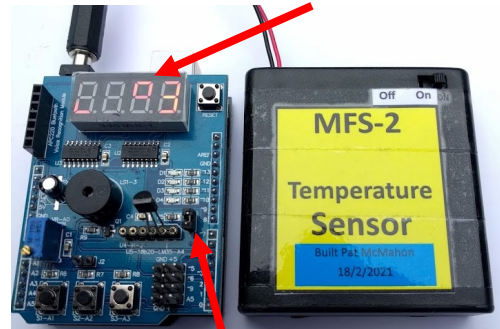
-Displays the Temperature in Degrees Celsius to 2 decimal places. Holding onto the Sensor, it recalibrates the Temperature every ~ 6 seconds.

Temp DS18B20



GND A4 +5V

Example Displays 22.93 Degrees Celsius



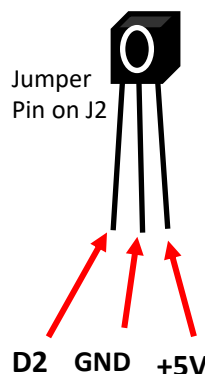
MFS 3 - Infrared Sensor (38Kz)

Components to Add—38Kz IR Receiver

-Left D2, Centre Gnd, Right +5v

How it Works —

Note – All Numerical Numbers on all 3 IR Remotes will display the number values pushed. Other Buttons pushed will display "L".



IMPORTANT- Put Jumper on J1, as an A4 Pull up Resistor.



Jumper Pin on J2

MFS 4 - Ultra Sonic Distance Measurement Sensor (using HC—SR04)

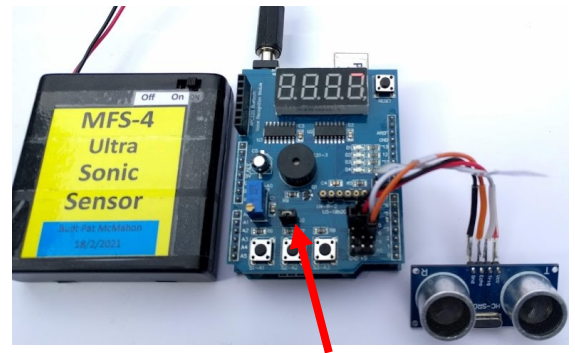
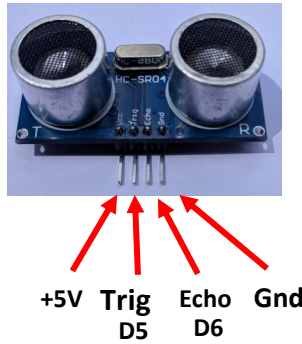
Components to Add—HC-SR04

-Left +5V, Trig D5, Echo D6, Right Gnd

How it Works —

-Moving an object above the Ultra Sonic Sensor will show the gap or distance between them in cm, on the 7 Seg display.

-It recalibrates every few seconds.



Jumper Pin on J2

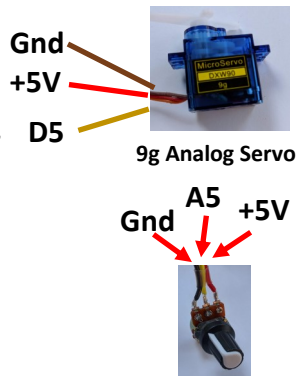
MFS 5 - Servo Position Controlled by a Potentiometer

Components to Add— Servo motor

-Left Brown/black Gnd, Centre Red +5V, Right Orange /white D5.

How it Works —

Slowly turning the Potentiometer Knob, moves the Servo Arm in either direction.



10K or higher Potentiometer



Jumper Pin on J2

MFS 6 - RGB LED Display showing 7 Colours

Components to Add—

RGB LED, common Negative.

-Left Red D5, Black Gnd, Green D6,

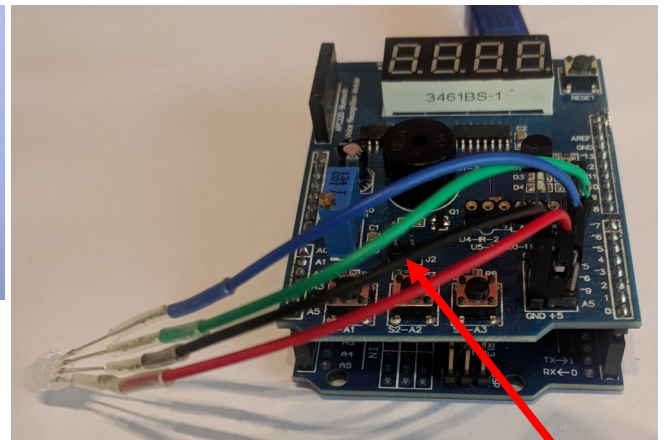
Right Blue D5.

How it Works —

- Displays RGB LED Colours, scrolling every 2 seconds, Red, Blue, Green, Yellow, Indigo, Cyan, White.



D5 Gnd D6 D5



Jumper Pin on J2

MFS 7 - Test

Components to Add—Nil

How it Works —

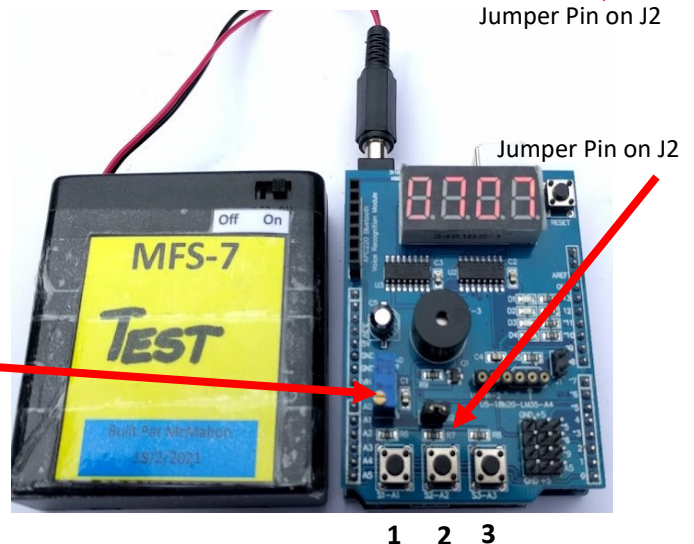
-Initially turning on, Buzzer beeps, press 2 to stop.

-Displays the Blue Potentiometer value, turn to change.

-Push Button 1 gives 0123 on the 7 Segment Display.

-Push Button 2 sounds Buzzer Beeping.

- Push Button 3 scrolls down the 4 onboard LED's.



Jumper Pin on J2

1 2 3