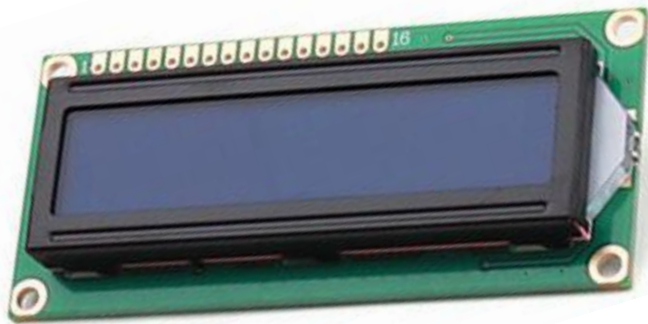


GoldSTEM_Lesson_19_LCD_Hello

tm 3-30-2016

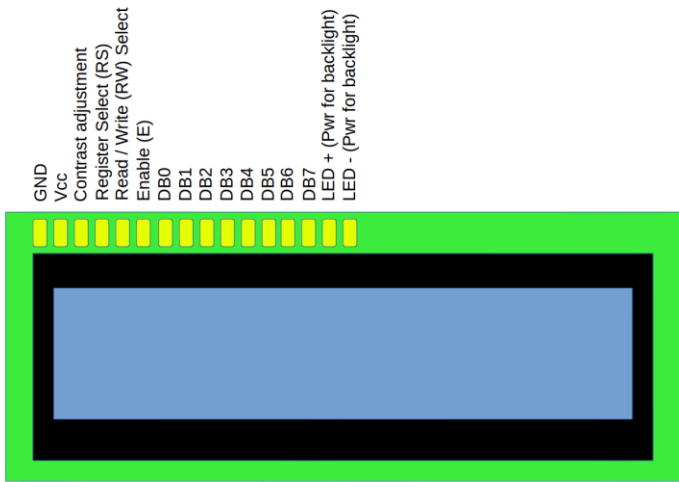
For this experiment we will be using some new components and require some soldering.
LCD 1602 2X16 Two rows by 16 Characters



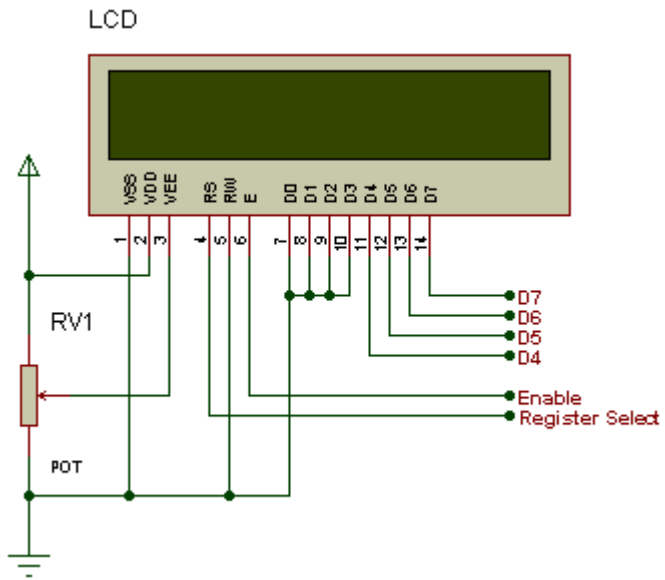
Data Sheet LCD 1602

<https://www.openhacks.com/uploads/productos/eone-1602a1.pdf>

Pinout

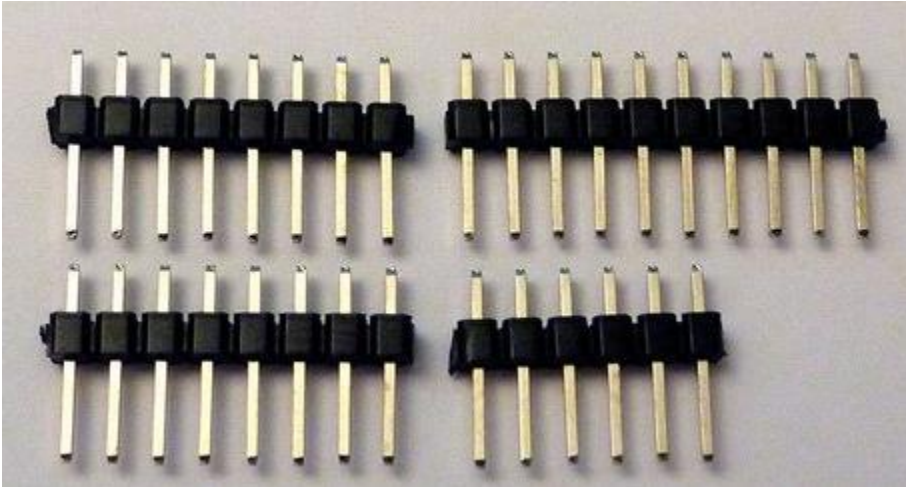


Schematic



Header

In your kit you may have a continuous long header or separate shorter headers.
Cut or combine the headers so you have 16 pins and solder them to the LCD 1602



LCD 1602 with header soldered pins to the back of the unit.
The LCD 1602 has a protective film on the display that can be removed and dissuaded.

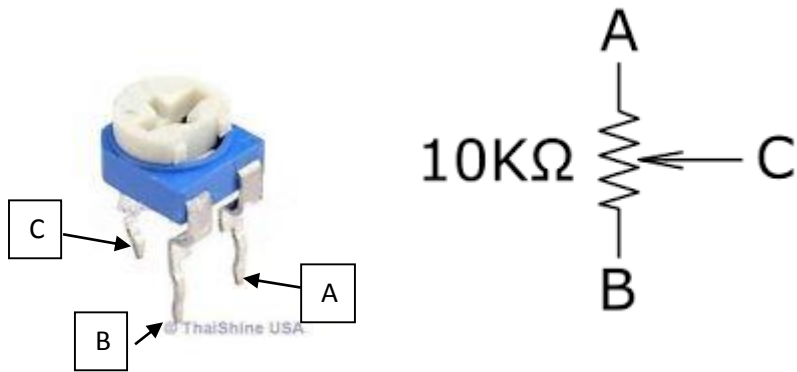


10K POT (potentiometer)

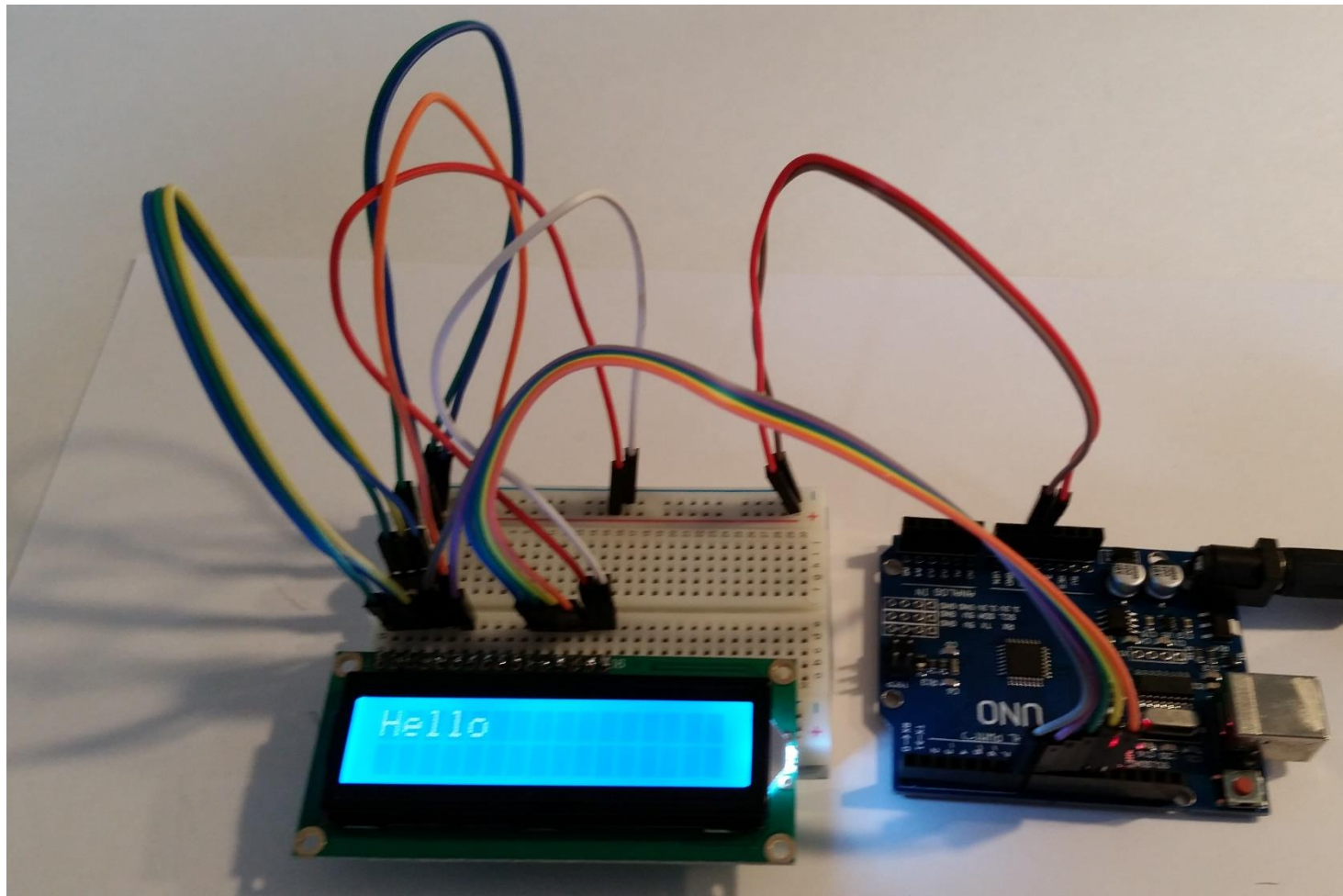
The markings on the top of the pot is 103 which means 10 with 3 zeros or 10,000 ohms

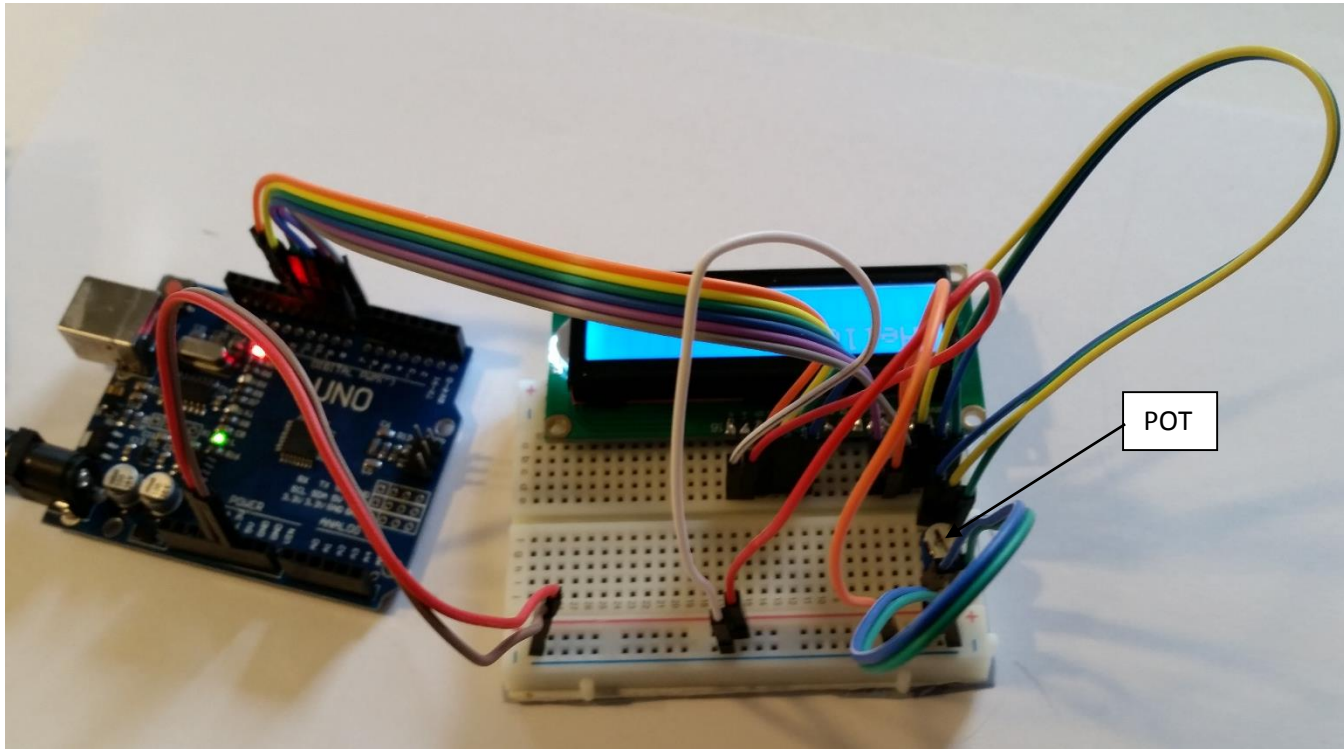
Use a screwdriver to turn the white dial on the pot the resistance between A and C will change from 0 ohms and 10K.

The resistance between b and C will change from 10K to 0 ohms.



Wiring the Circuit





This is by far the most challenging experiment we wired up.
The second picture shows the POT wiring.

Place the LCD pin 1 into a1
LCD pin 16 should end up in a16

Place the POT
A into i1
C into g2
B into i3

Green jumper e1 to f1
Blue jumper e2 to f3
Yellow jumper e3 to f2
Grey jumper e4 to UNO DIGITAL 7
Orange jumper e5 to - Rail
Purple jumper e6 to UNO DIGITAL 8
Blue jumper e11 to UNO DIGITAL 9
Yellow jumper e12 to UNO DIGITAL 10
Orange jumper e13 to UNO DIGITAL 11
Orange jumper e14 to UNO DIGITAL 12

Red jumper e15 to + Rail
White jumper e16 to - Rail

Green jumper j1 to - Rail
Blue jumper j2 to + Rail

Red jumper + Rail to UNO POWER 5V
Brown jumper - Rail to UNO POWER GND

Load the Code

GoldSTEM_Lesson_19_LCD_Hello

```
/* GoldSTEM_Lesson_19_LCD_Hello          tm 3-31-2016  
*/
```

```
// include the LiquidCrystal library code:  
#include <LiquidCrystal.h>
```

```
// Select the UNO Pins being used  
LiquidCrystal lcd(7, 8, 9, 10, 11, 12);
```

```
void setup() {  
  // set up the LCD's number of columns and rows:  
  lcd.begin(16, 2);  
  // Print a message to the LCD.  
  lcd.print("Hello");  
}  
  
void loop() {  
  
}
```

The code looks simple

The first thing we have to do is adjust the POT so that you can read the output of the LCD. Using a screwdriver turn the pot back and forth so you get a good contrast on the Hello.

Ok now can you figure out how to add your name to the Hello.

Change the line

```
lcd.print("Hello");
```

To

```
lcd.print("Hello your name");
```

Questions

How many times does the program write the word Hello to the LCD?

End of Lesson

