AUTODESK CIRCUITS

https://circuits.io/lab/

The easiest way to learn electronics and Arduino programming.
AUTODESK Tinkercad Circuits

https://www.tinkercad.com/

From mind to design in minutes

Tinkercad is a free, easy-to-use app for 3D design, electronics, and coding. It's used by teachers, kids, hobbyists, and designers to imagine, design, and make anything!

Start Tinkering
Blink LED with an Arduino!
// Pin 13 has an LED connected on most Arduino boards. 
// give it a name: 
int led = 13;

// the setup routine runs once when you press reset: 
void setup() { 
    // initialize the digital pin as an output. 
    pinMode(led, OUTPUT); 
}

// the loop routine runs over and over again forever: 
void loop() { 
    digitalWrite(led, HIGH); // turn the LED on (HIGH is the voltage level) 
    delay(2000); // wait for a second 
    digitalWrite(led, LOW); // turn the LED off by making the voltage LOW 
    delay(500); // wait for a second 
}
Hello World!

HD44780

- VSS (Ground)
- VDD (+ve)
- VE (Contrast Voltage)
- Register Select
- ReadWrite
- Enable
- Data 0
- Data 1
- Data 2
- Data 3
- Data 4
- Data 5
- Data 6
- Data 7
- Backlight Anode (+ve)
- Backlight Cathode (Ground)
// include the LCD's library
#include <LiquidCrystal.h>

// initialize library with the numbers of the interface pins:
//               (RS, Enable, DB4, DB5, DB6, DB7)
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, the default position is upper left (column 0, row 0)
  lcd.print("Hello World!");
}

void loop() {
  // set cursor to beginning of second row (column 0, line 1)
  lcd.setCursor(0, 1);
  // print the number of milliseconds since starting the simulation:
  lcd.print(millis());
  delay(10); // a delay is necessary to run the simulation at full speed.
}