Web Site: www.parallax.com
Forums: forums.parallax.com
Sales: sales@parallax.com
Technical: support@parallax.com

Office: (916) 624-8333
Fax: (916) 624-8003
Sales: (888) 512-1024
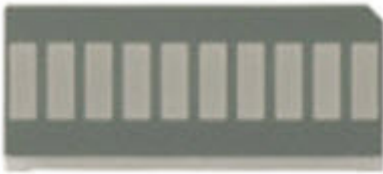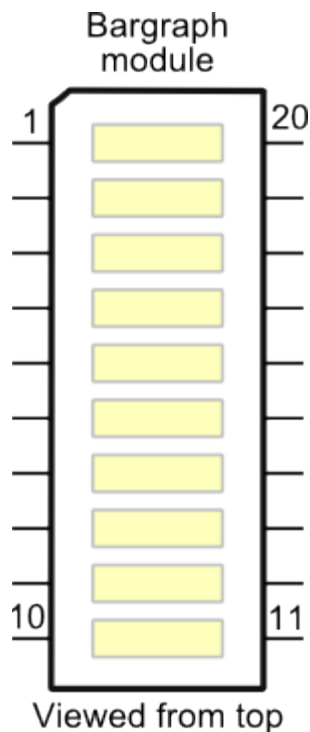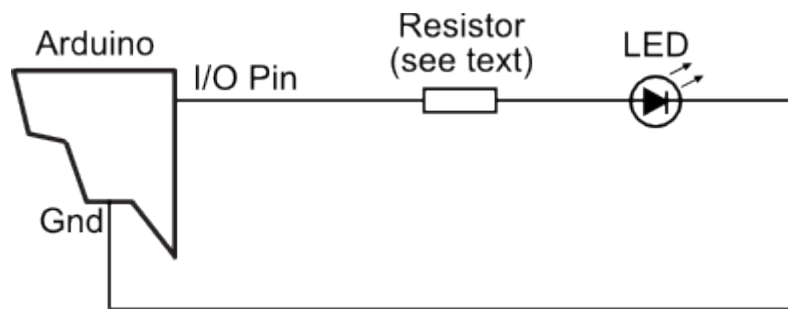Tech Support: (888) 997-8267

# LED Bar Graph Arduino Demo



**Please Note:** This product is not sold by Parallax. This demo was created to support the 2013 National microMedic Contest kits, which are no longer available.

The 10 LED bar graph display is a self-contained package consisting of 10 individual rectangular LEDs. The LED in the package has its own anode and cathode leads, allowing for flexible hookup.  This demo for the Arduino and Board of Education Shield supports the 2013 National microMedic Contest kits.
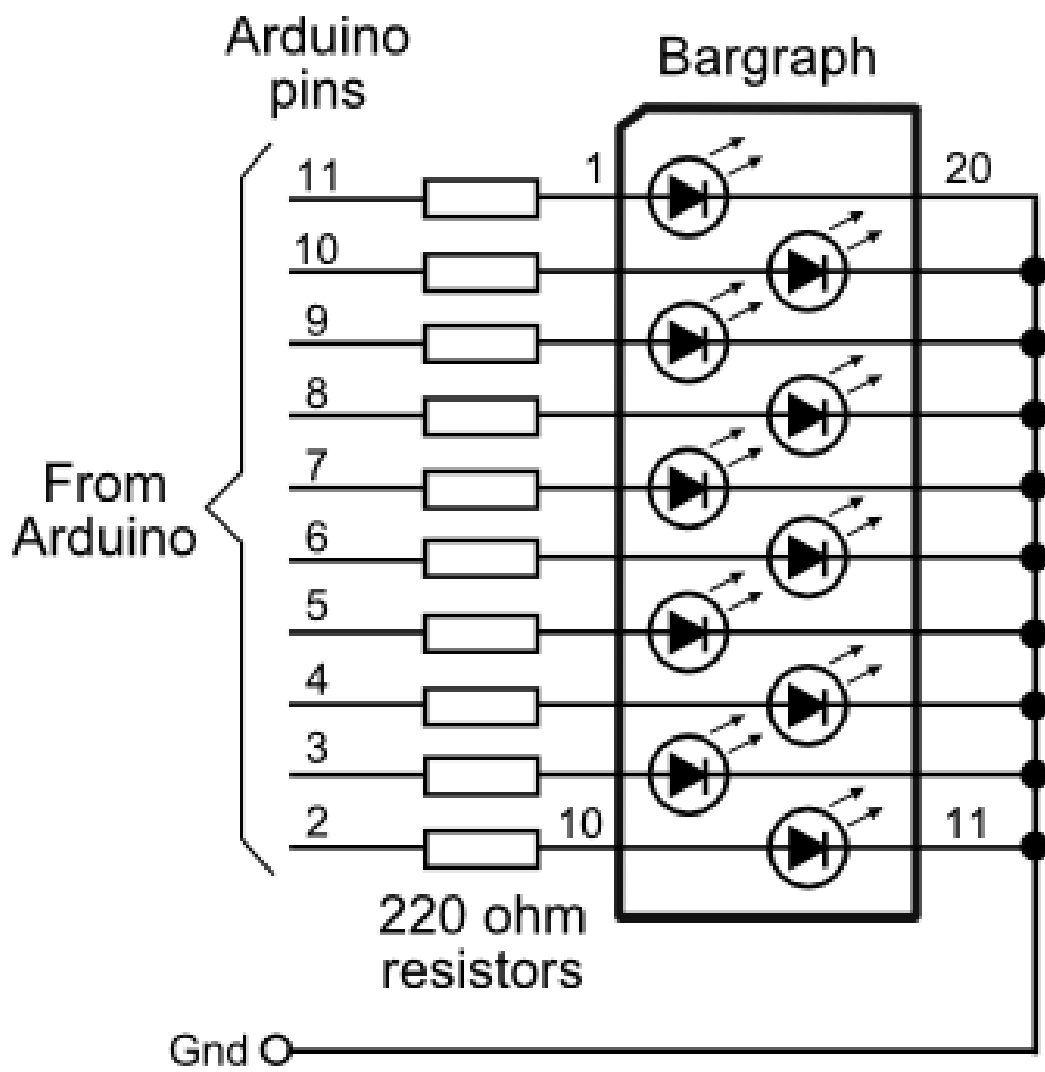


The LEDs of this display package require a current-limiting resistor when powered from a 5V logic pin. The following figure demonstrates the basic concept behind using a current-limiting resistor. The value of the resistor is typically between 220 and 470 ohms; the higher the value, the more the current that is limited, and the less bright the LED.

## Connections

To connect the bar graph package to the Arduino Shield, attach the leads of the device as shown in the figure.

## Programming

To use this example, upload the following sketch to your Arduino. Each LED in the bar graph lights up in turn for quarter of a second. Additionally, you may verify the operation of the sketch by opening the Serial Monitor window, and setting the Baud Rate to 9600. A series of ten 0s and 1s appear, each on a line, denoting the corresponding LED activity on the bar graph.

```
// Array of pins attached to LEDs
int ledPins[] = {2, 3, 4, 5, 6, 7, 8, 9, 10, 11};
int ledCount = 10;  // Number of LEDs

void setup() {
  Serial.begin(9600);
  // Make all LED pins outputs
  for (int thisLed = 0; thisLed < ledCount; thisLed++) {
    pinMode(ledPins[thisLed], OUTPUT);
  }
}

void loop() {
  // Light up one LED going across at a time
  for (int thisLed = 0; thisLed < ledCount; thisLed++) {
    digitalWrite(ledPins[thisLed], HIGH);  // Turn on LED
    delay(250);      // Wait 1/4 sec

    for (int i = ledCount-1; i >= 0; i--) {          // Display in Serial
      Serial.print(digitalRead(ledPins[i]));
    }
    Serial.println("");                    // New line
    digitalWrite(ledPins[thisLed], LOW);   // Turn off ED
  }
}
```