Lesson 7 Passive Buzzer

Código:

```
//www.elegoo.com
//2016.12.08

#include "pitches.h"

// notes in the melody:
int melody[] = {
  NOTE_C5, NOTE_D5, NOTE_E5, NOTE_F5, NOTE_G5, NOTE_A5, NOTE_B5,
NOTE_C6};
int duration = 500;  // 500 miliseconds

void setup() {

}

void loop() {
  for (int thisNote = 0; thisNote < 8; thisNote++) {
      // pin8 output the voice, every scale is 0.5 sencond
      tone(8, melody[thisNote], duration);

      // Output the voice after several minutes
      delay(1000);
  }

  // restart after two seconds
  delay(2000);
}
```
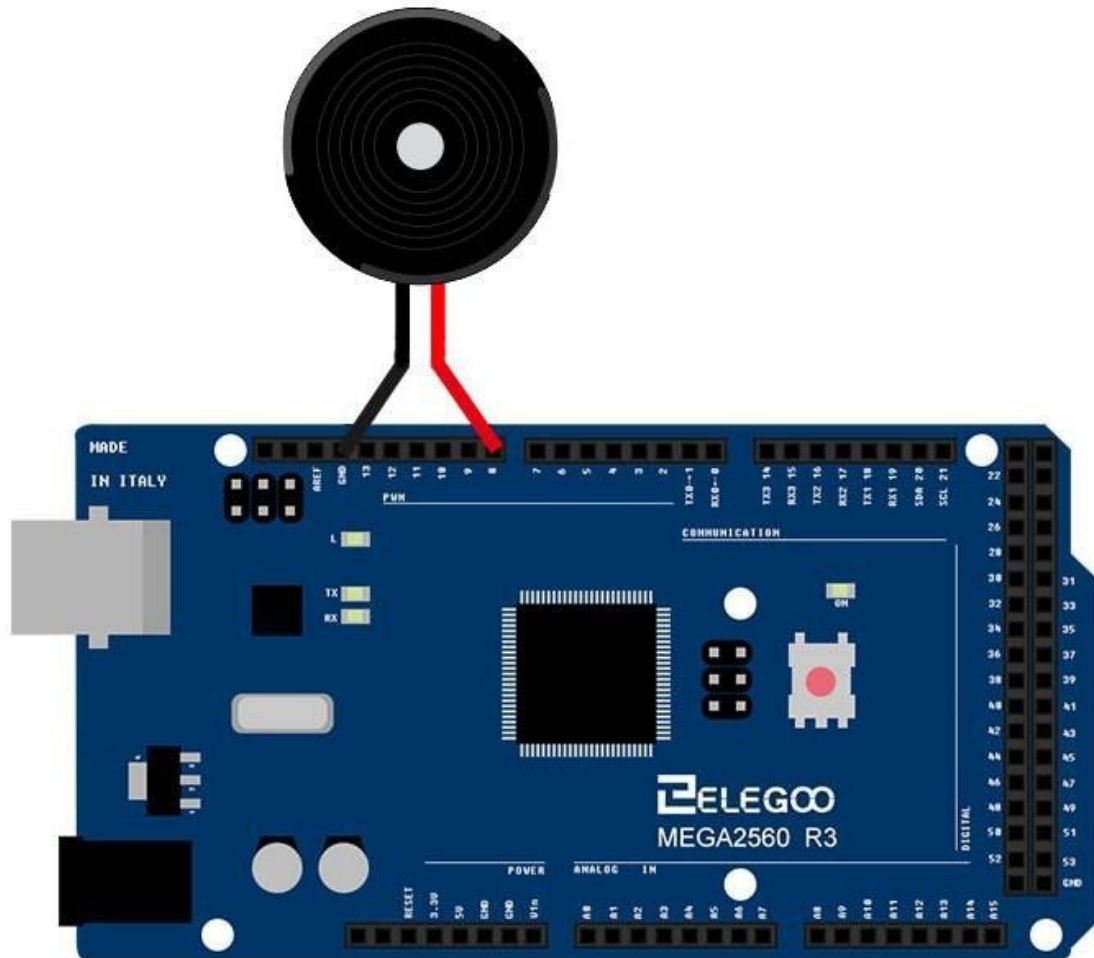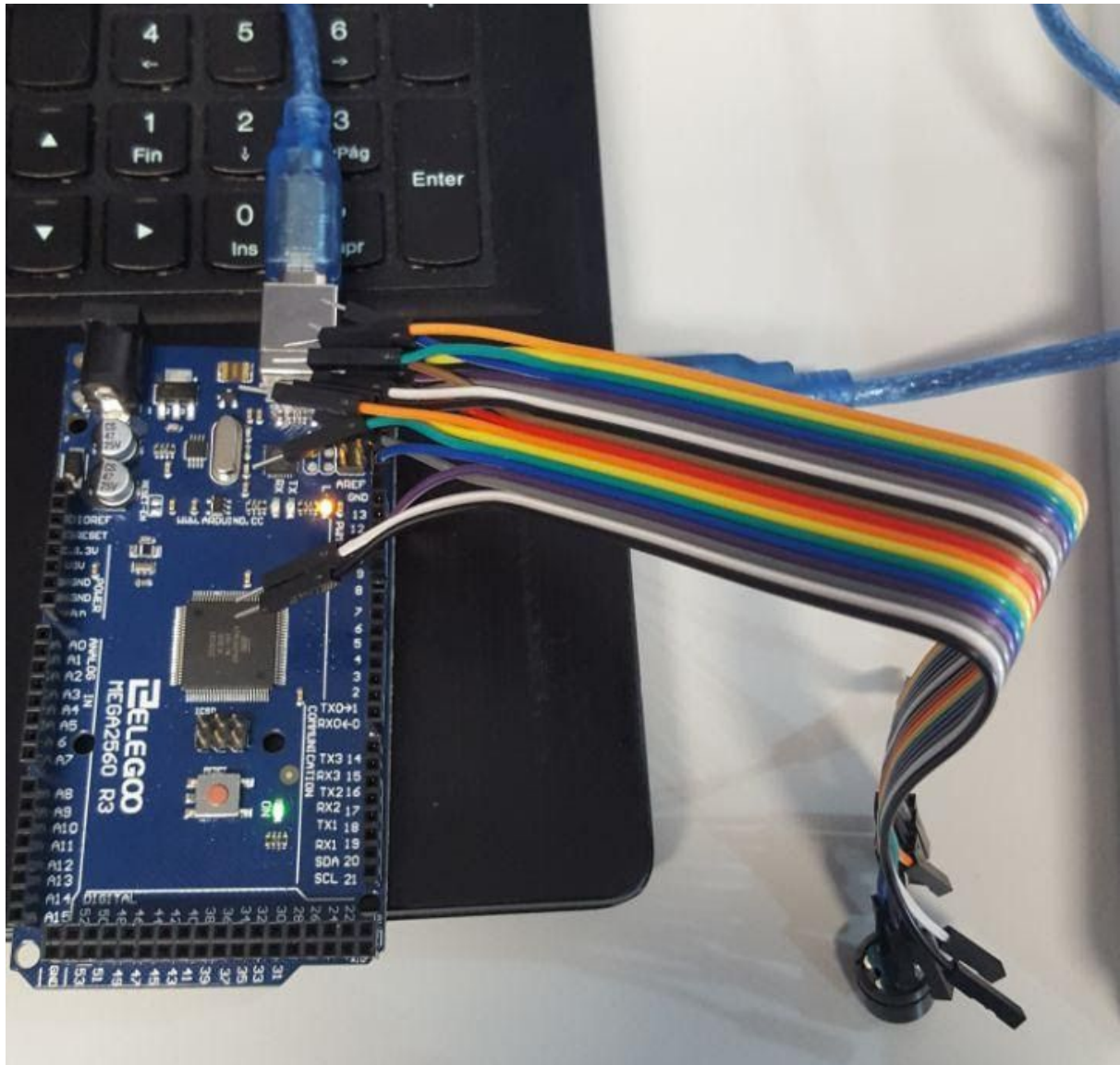
Dibujo esquemático:

Foto:

p06_LightTheremin

Código:

```
/*
  Arduino Starter Kit example
  Project 6 - Light Theremin

  This sketch is written to accompany Project 6 in the Arduino Starter
Kit

  Parts required:
  - photoresistor
  - 10 kilohm resistor
  - piezo

  created 13 Sep 2012
  by Scott Fitzgerald

  http://www.arduino.cc/starterKit

  This example code is part of the public domain.
*/

// variable to hold sensor value
int sensorValue;
// variable to calibrate low value
int sensorLow = 1023;
// variable to calibrate high value
int sensorHigh = 0;
// LED pin
const int ledPin = 13;

void setup() {
  // Make the LED pin an output and turn it on
  pinMode(ledPin, OUTPUT);
  digitalWrite(ledPin, HIGH);

  // calibrate for the first five seconds after program runs
  while (millis() < 5000) {
    // record the maximum sensor value
    sensorValue = analogRead(A0);
    if (sensorValue > sensorHigh) {
```

```
      sensorHigh = sensorValue;
      }
      // record the minimum sensor value
      if (sensorValue < sensorLow) {
      sensorLow = sensorValue;
      }
  }
  // turn the LED off, signaling the end of the calibration period
  digitalWrite(ledPin, LOW);
}

void loop() {
  //read the input from A0 and store it in a variable
  sensorValue = analogRead(A0);

  // map the sensor values to a wide range of pitches
  int pitch = map(sensorValue, sensorLow, sensorHigh, 50, 4000);

  // play the tone for 20 ms on pin 8
  tone(8, pitch, 20);

  // wait for a moment
  delay(10);
}
```
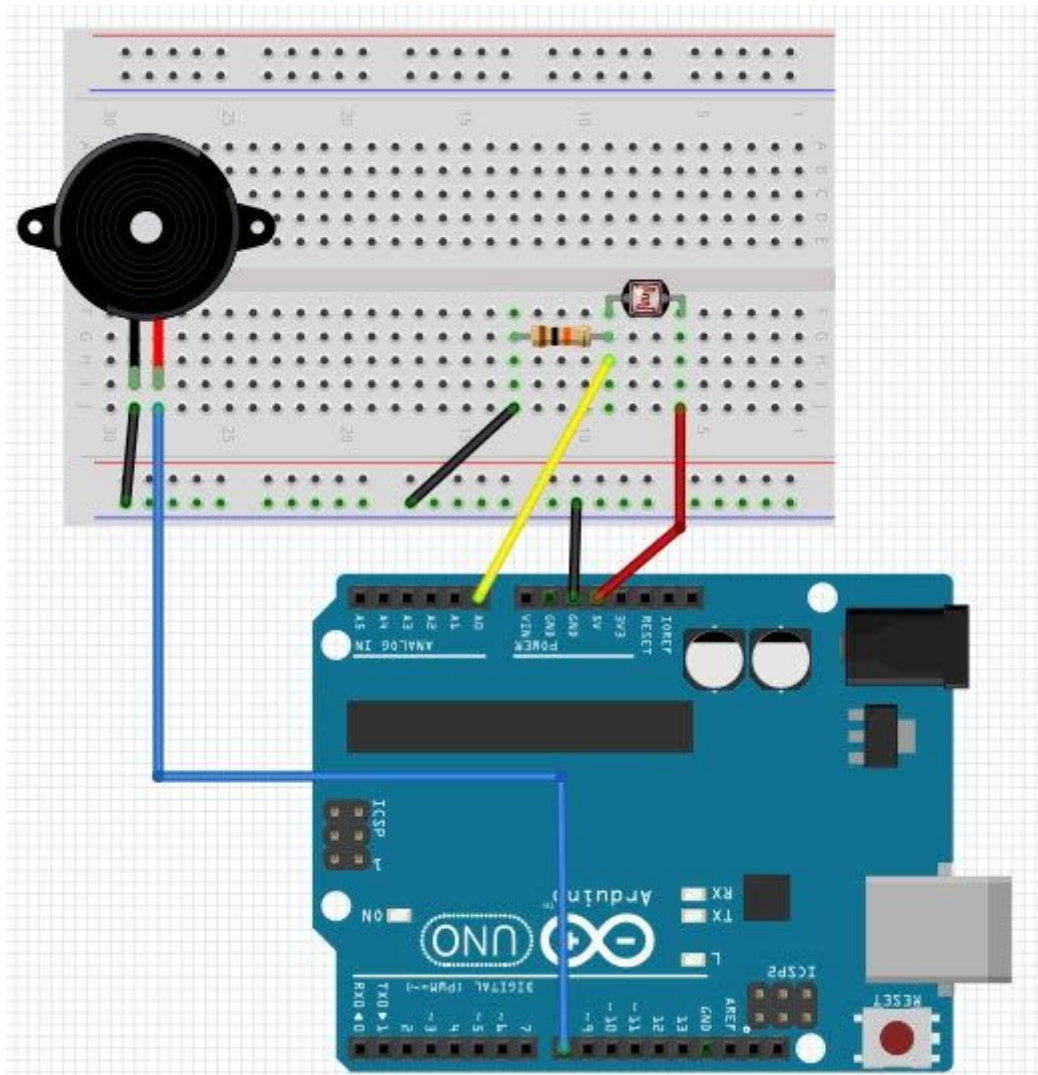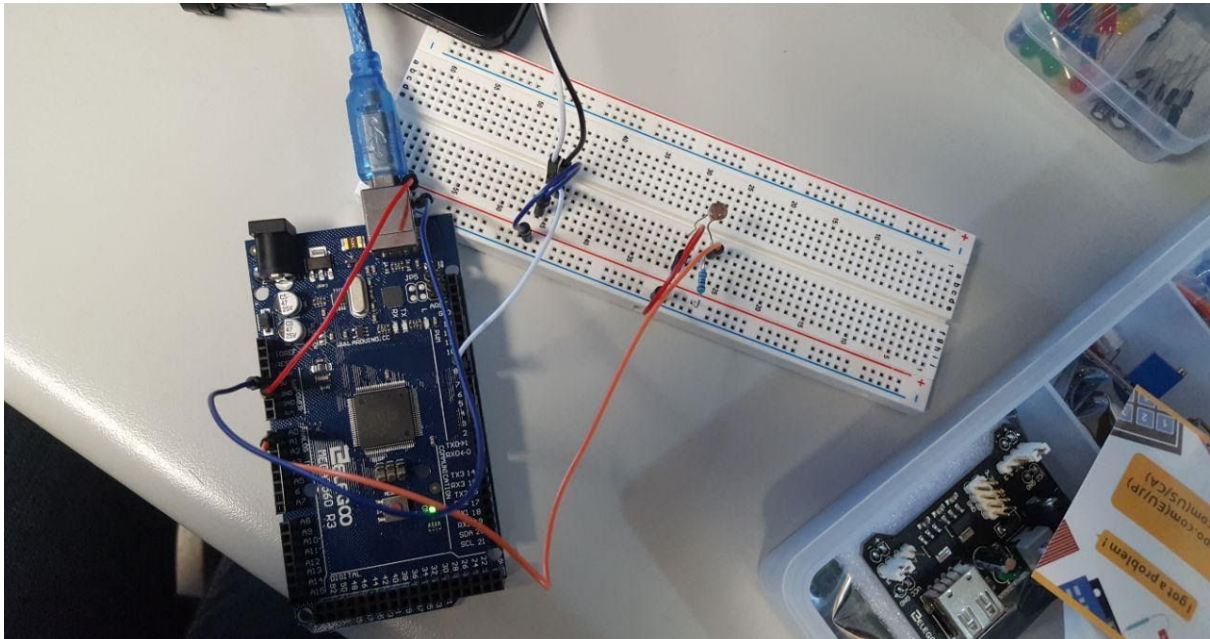
Dibujo esquemático:

Foto:

Lesson 26 Photocell

Código:

```
//www.elegoo.com
//2016.12.9

int lightPin = 0;
int latchPin = 11;
int clockPin = 9;
int dataPin = 12;

int leds = 0;

void setup()
{
  pinMode(latchPin, OUTPUT);
  pinMode(dataPin, OUTPUT);
  pinMode(clockPin, OUTPUT);
}
void updateShiftRegister()
{
    digitalWrite(latchPin, LOW);
```

```
    shiftOut(dataPin, clockPin, LSBFIRST, leds);
    digitalWrite(latchPin, HIGH);
}
void loop()
{
  int reading  = analogRead(lightPin);
  int numLEDSLit = reading / 57;  //1023 / 9 / 2
  if (numLEDSLit > 8) numLEDSLit = 8;
  leds = 0;   // no LEDs lit to start
  for (int i = 0; i < numLEDSLit; i++)
  {
      leds = leds + (1 << i);  // sets the i'th bit
  }
  updateShiftRegister();
}
```
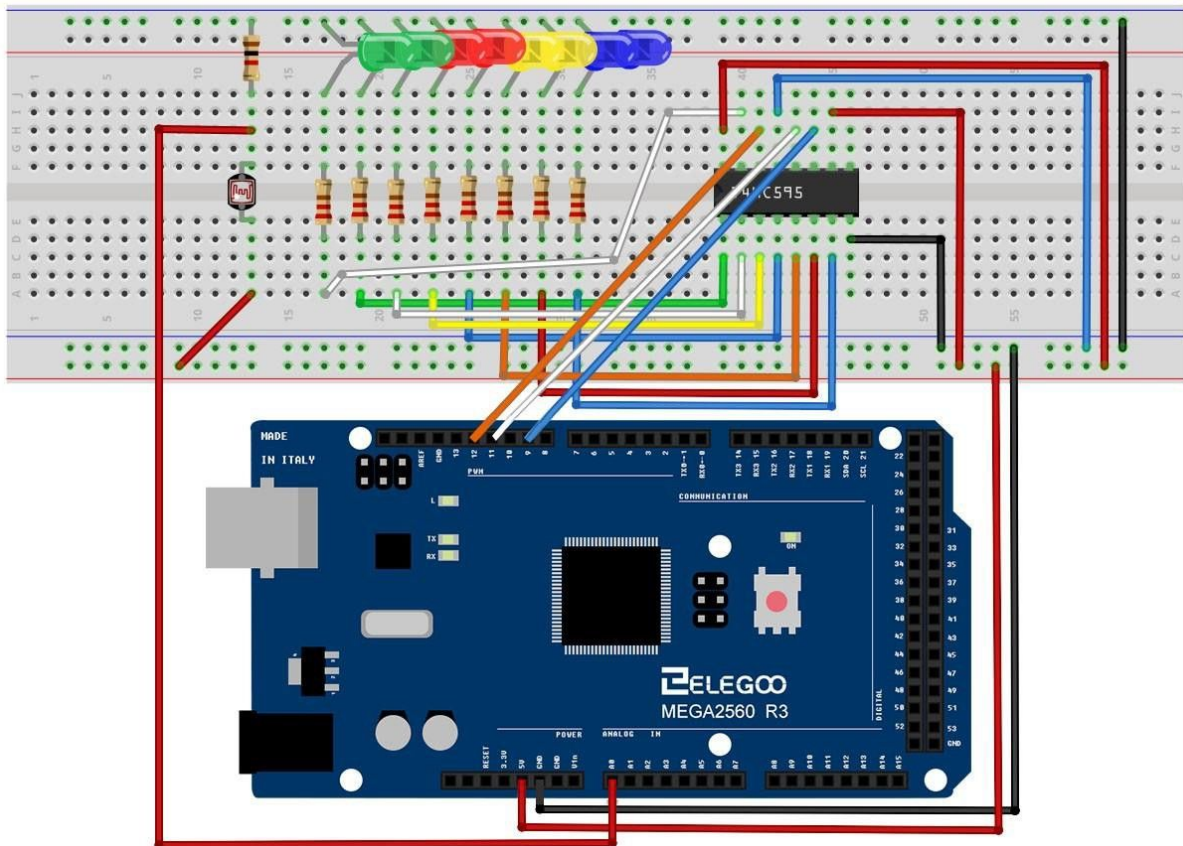
Dibujo esquemático:

Foto: