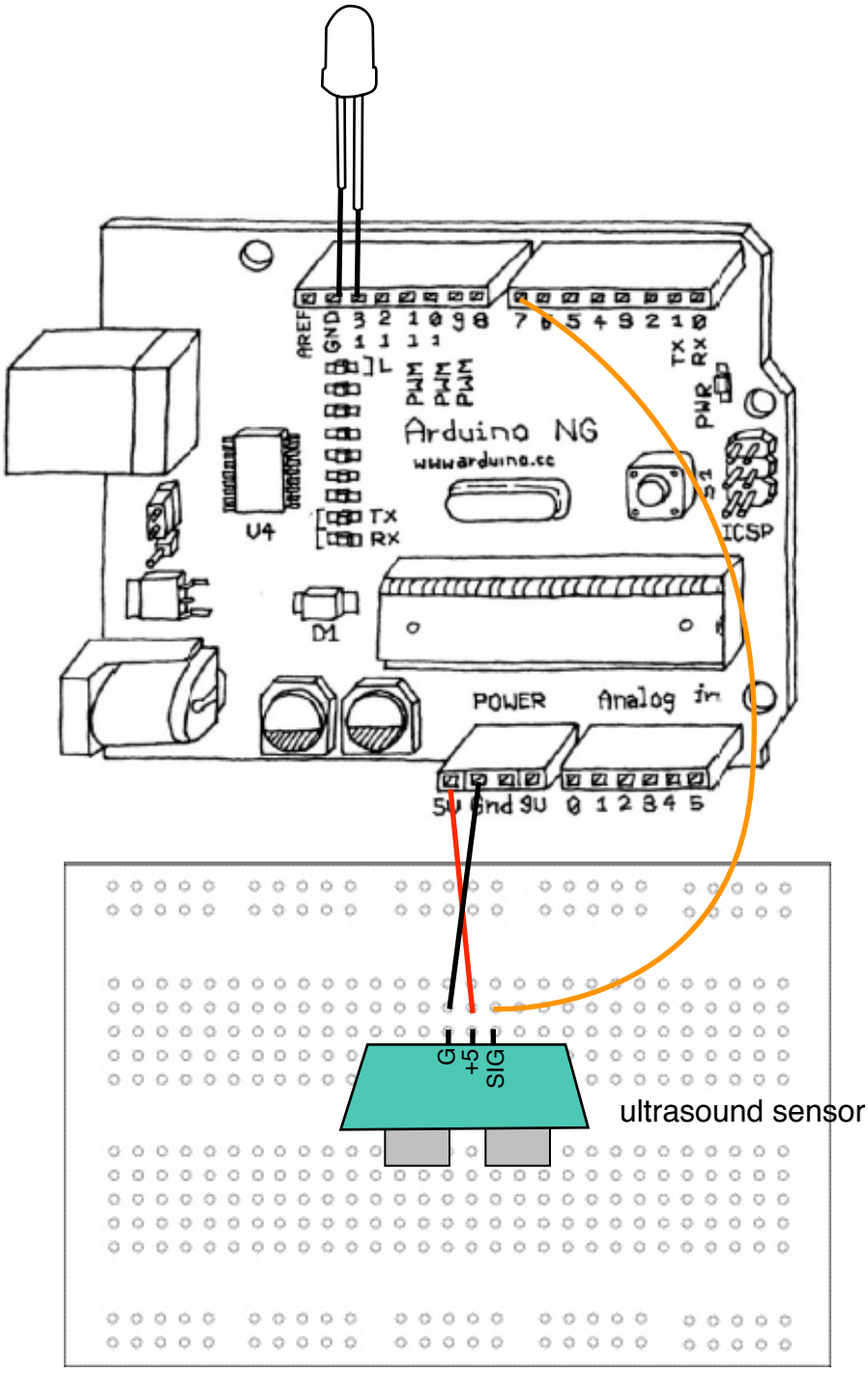
Ultrasound sensor

Program an ultrasound sensor to turn an LED on. Program an ultrasound sensor to send out an ultrasound wave and then listen for it to bounce back while counting time. *This is the same technique that bats use to locate their prey.* Program an LED to turn on at particular distance or range from the sensor.



```
// Use an ultrasound sensor to turn an LED on. Sensor sends a wave out and then listens for it to bounce back. Stand at different distances from the sensor until you trigger the LED to turn on.

int ultraSoundpin = 7;
int ledPin = 13;
unsigned long ultrasoundDuration;


void setup() {
  beginSerial(9600);
}


void loop() {
  // switch pin to output
  pinMode(ultraSoundpin, OUTPUT);
   pinMode(ledPin, OUTPUT);
  // send a low, wait 2 microseconds, send a high then wait 10 microseconds
  digitalWrite(ultraSoundpin, LOW);
  delayMicroseconds(2);
  digitalWrite(ultraSoundpin, HIGH);
  delayMicroseconds(10);
  digitalWrite(ultraSoundpin, LOW);
   // switch pin to input
  pinMode(ultraSoundpin, INPUT);
  // wait for a pulse to come in as high
  ultrasoundDuration = pulseIn(ultraSoundpin, HIGH);
  // output
  Serial.print(ultrasoundDuration);
  Serial.print("\t");
  Serial.print(ultrasoundDuration/58, DEC);
  Serial.print(" cm");
  Serial.println();

  if(ultrasoundDuration < 4000){ // if the first sensor works make the LED flash
  digitalWrite(ledPin, HIGH);
```

```
}
 else
{
 digitalWrite(ledPin, LOW);
}
 delay(100);
}

//Now try to build a circuit with your ultrasound sensor that turns a second LED or a motor on from a different distance.
```