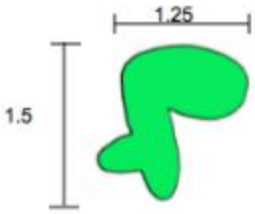
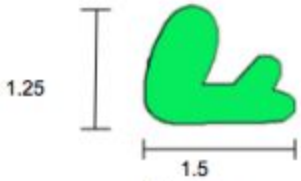
Examples of Projects

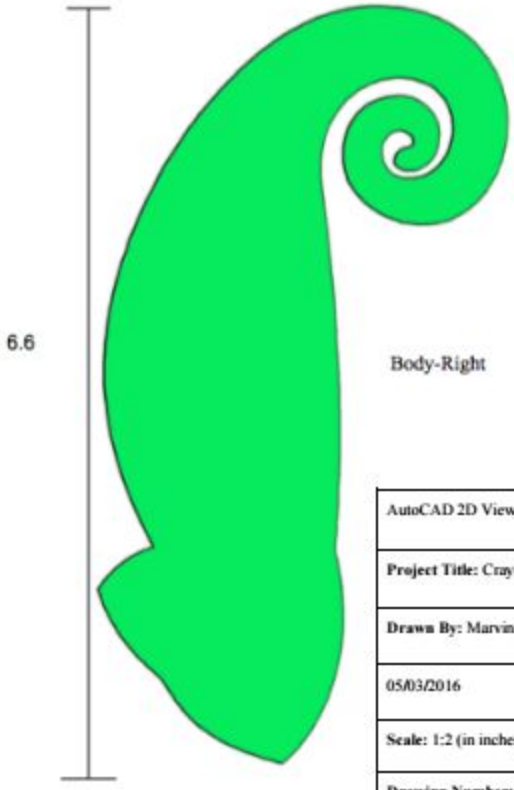
Crayon the Chameleon Toy



Back Leg

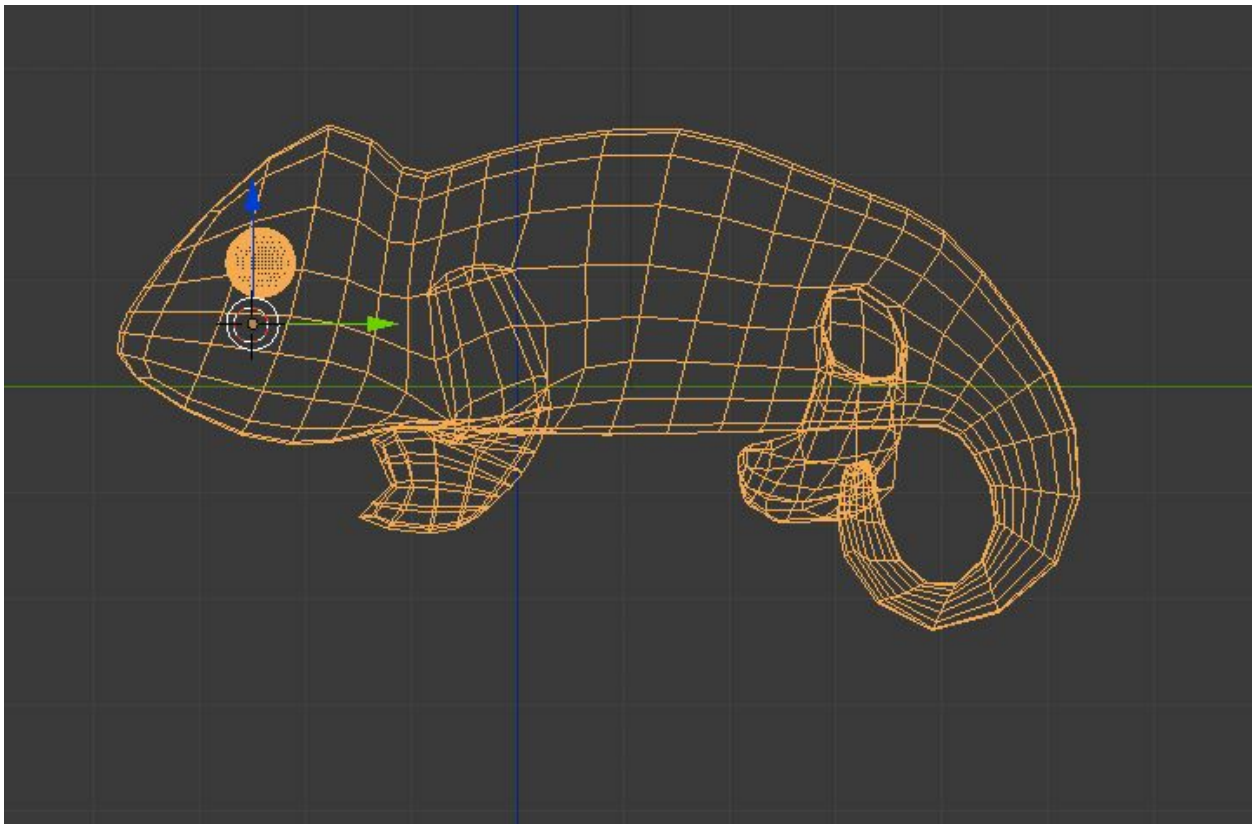


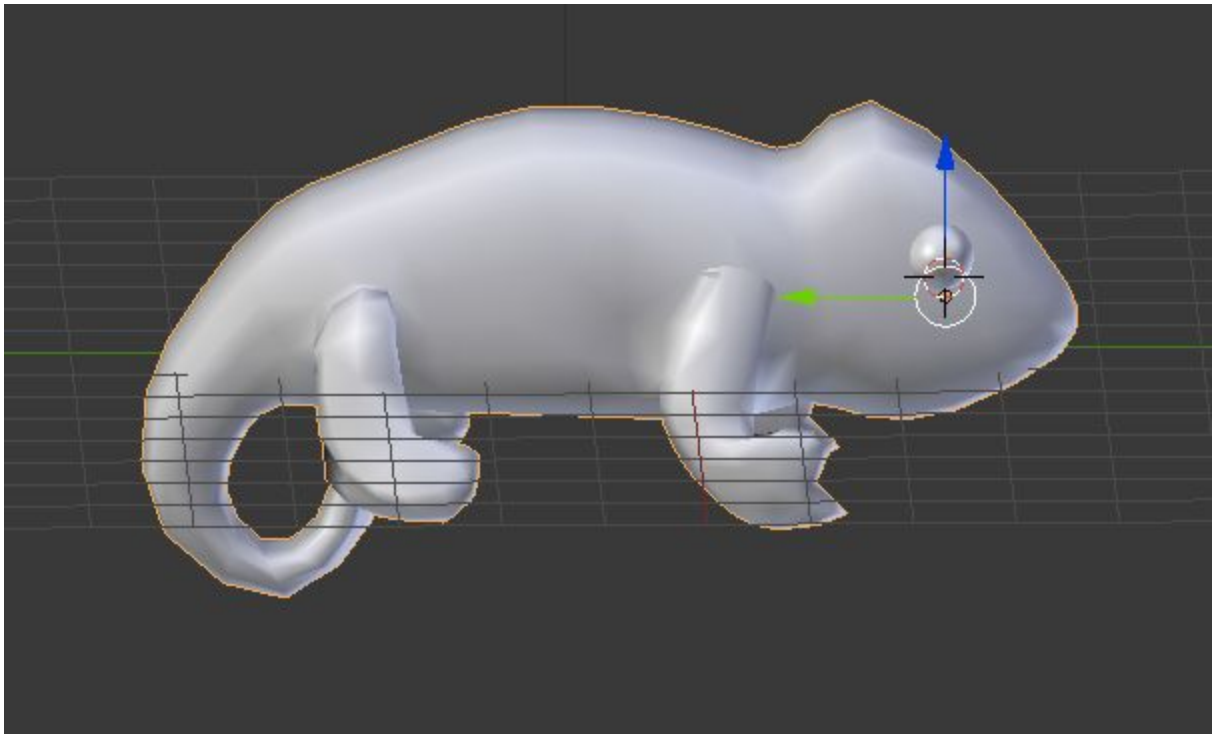
Front Leg



Body-Right

AutoCAD 2D Views
Project Title: Crayon
Drawn By: Marvin Guerrero
05/03/2016
Scale: 1:2 (in inches)
Drawing Number: A-001





```
#include <Adafruit_NeoPixel.h>

#define PIN 6

Adafruit_NeoPixel strip = Adafruit_NeoPixel(60, PIN, NEO_GRB + NEO_KHZ800);


int sensorPin = 0; //the analog pin the TMP36's Vout (sense) pin is connected to
                        //the resolution is 10 mV / degree centigrade with a
                        //500 mV offset to allow for negative temperatures

void setup() {
  // put your setup code here, to run once:
  strip.begin();
  strip.show(); // Initialize all pixels to 'off'
  Serial.begin(9600);
}

void loop() {
  // put your main code here, to run repeatedly:

  float temp = getVoltage(sensorPin); //getting the voltage reading from the temperature sensor
  temp = (((temp-0.5)*100)*1.8)+32;
  int tempF = temp; //to degrees ((volatge - 500mV) times 100)
  Serial.println(tempF); //printing the result
  Serial.println(temp);
//  int reading = analogRead(sensorPin);
//  float voltage = reading * 5.0;
```

```
  delay(3000);

  if(tempF<40)//default
  {
    Serial.println("Rainbow");
    rainbow(20);
  }
  else if(tempF<=72)
  {
    Serial.println("White");
    colorWipe(strip.Color(255, 255, 255), 50); // White RGBW
  }
  else if(tempF<=74)
  {
    Serial.println("Green");
    colorWipe(strip.Color(0, 255, 0), 50); // Green not under stress
  }
  else if(tempF<=76)
  {
    Serial.println("Cyan");
    colorWipe(strip.Color(0, 255, 255), 50); // cyan relaxed
  }
  else if(tempF<=78)
  {
    Serial.println("Blue");
    colorWipe(strip.Color(0, 0, 255), 50); // Blue normal
  }

// Slightly different, this makes the rainbow equally distributed throughout
void rainbowCycle(uint8_t wait) {
  uint16_t i, j;

  for(j=0; j<256*5; j++) { // 5 cycles of all colors on wheel
    for(i=0; i< strip.numPixels(); i++) {
      strip.setPixelColor(i, Wheel(((i * 256 / strip.numPixels()) + j) & 255));
    }
    strip.show();
    delay(wait);
  }
}

float getVoltage(int pin){
return (analogRead(pin) * .004882814); //converting from a 0 to 1024 digital range
// to 0 to 5 volts (each 1 reading equals ~ 5 millivolts
}

void rainbow(uint8_t wait) {
  uint16_t i, j;

  for(j=0; j<256; j++) {
    for(i=0; i<strip.numPixels(); i++) {
      strip.setPixelColor(i, Wheel((i+j) & 255));
    }
    strip.show();
    delay(wait);
```

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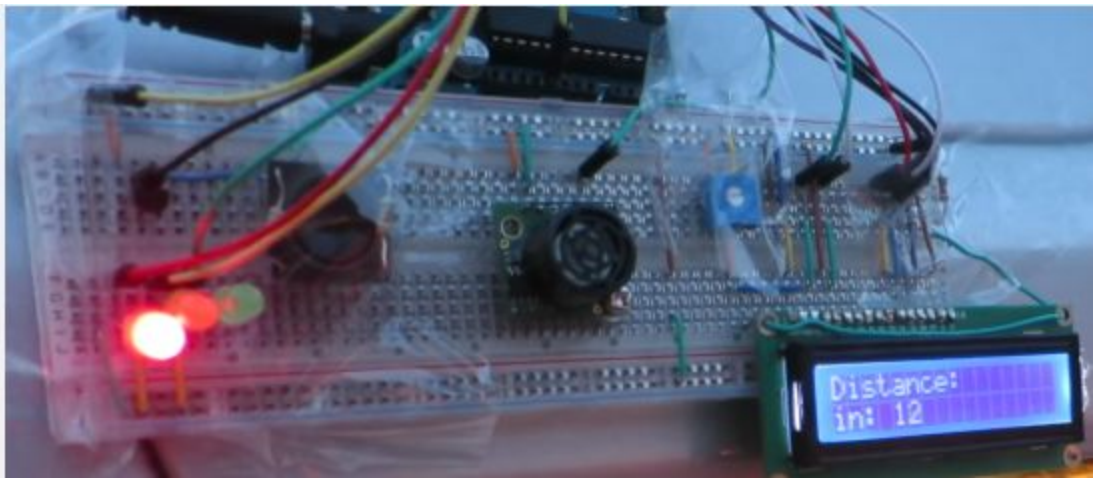
    delay(wait);
```

Backup Car Sensor



Upright Self-Balancing Robot