

# **Playable Fashion: Buzzkill**

**Sample Slide Show**

Kaho Abe & Ramsey Nasser

**What if these were functional?**



Walmart.com



Etsy, GoFollowRabbits

## Nintendo Power Glove, (1989)



## Peregrine Game Glove (2010)



# Laser Tag



vice.com



# Cosplay

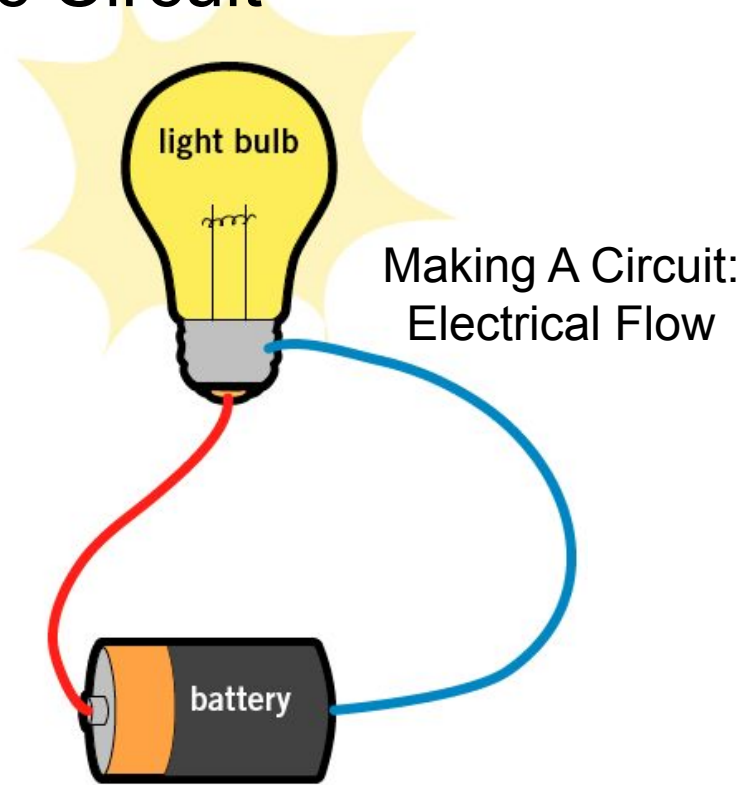
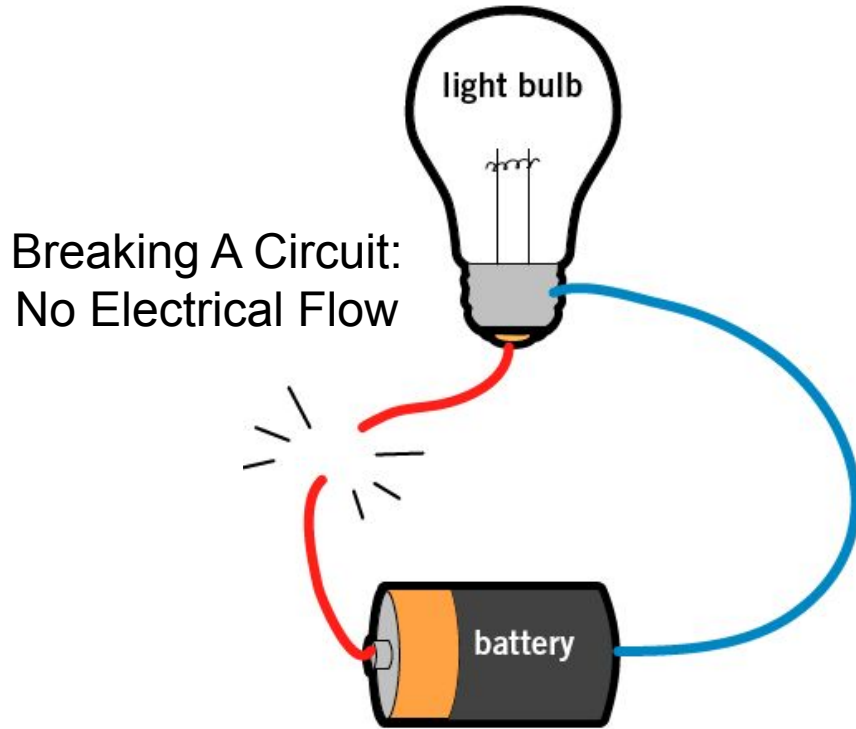


# LARPing (Live Action Role Playing)



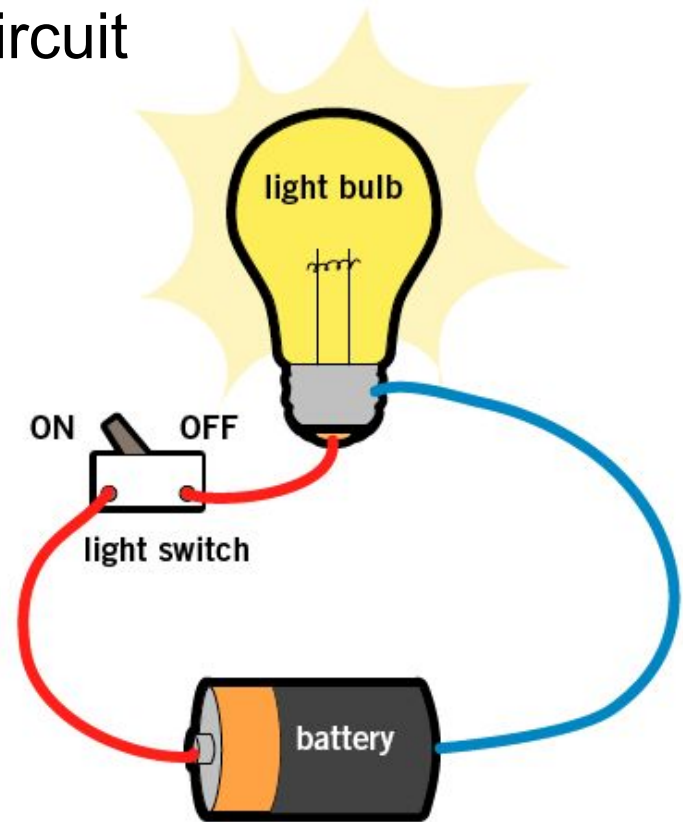
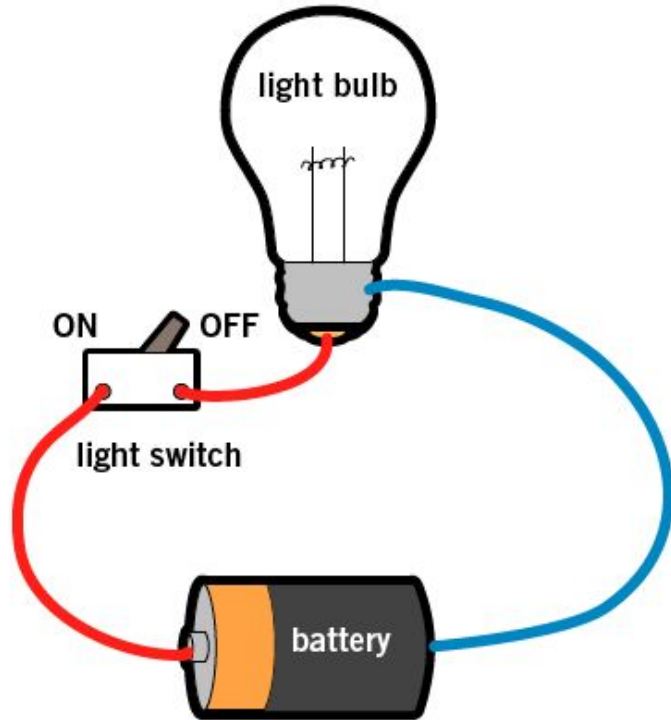
LARPING.org

# Making and Breaking a Electric Circuit





# Making and Breaking a Electric Circuit



This concept exists all around us!

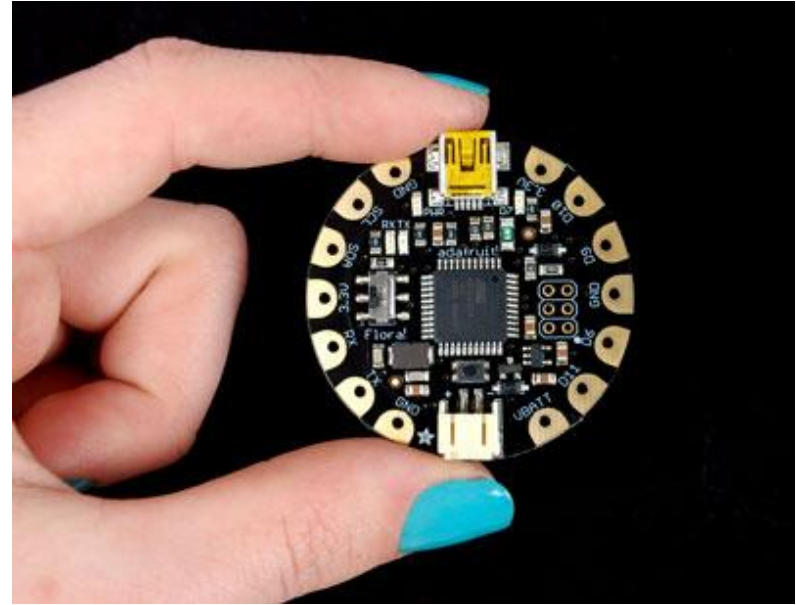


**A keyboard and mouse  
is a bunch of switches!**



# FLORA from Adafruit

- Flora is a development system for programming microprocessors especially for wearable projects.
- Flora is open-source.
- Flora is based on the Arduino and uses the Arduino software to program.



[Adafruit Flora Website](#)   [Getting Started with Flora](#)



# Let's make the gloves!

## Playable Fashion Weekend Workshop: Glove Worksheet

with Kaho Abe & Ramsey Nasser  
November 2013 at Eyebeam Art & Technology Center

### Materials:

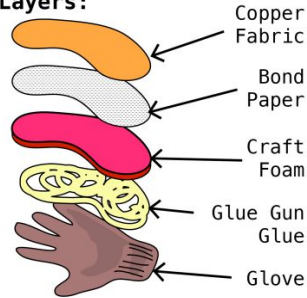
- Copper Fabric (LessEMF)
- Work Gloves (Home Depot)
- Bonding Paper (Amazon)
- Craft Foam (craft stores)
- Flora & USB cord
- 2 Alligator Clips

### Tools:

- Glue gun
- Scissors
- an Iron
- Scrap cotton fabric



### Layers:



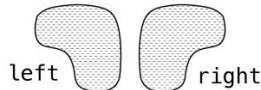
### TEMPLATE FOR CONDUCTIVE PADS

### Cutting:

- Cut 2 pieces of Color Foam
- Cut 2 pieces of Copper Fabric
- Cut 2 pieces of Bonding Paper

\*\* For bonding paper, note smooth and rough sides. Must cut mirrored paid for right and left gloves.

Cut along dotted line



Note: make sure you print at full scale or the scale of the template will be changed.

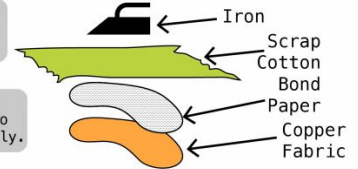
### Step 1:

Place bonding paper rough side down, on top of copper piece. Cover with scrap cotton fabric, and iron for 3 seconds. Make sure you cover all areas.

tip: use scrap cotton fabric when ironing to stop iron from getting destroyed with glue from bonding paper.

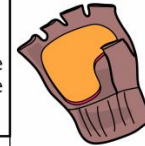
tip: don't over use iron or glue will get all over the place.

tip: steam should be turned off on iron to melt the glue properly.



### Step 2:

Wait til it's cool to the touch. Carefully peel paper from glue. There should remain a adhesive layer on the copper piece.

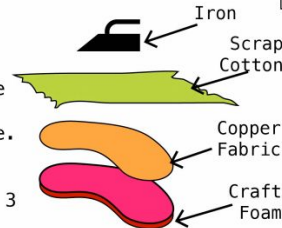


### Step 4:

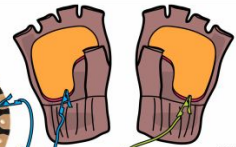
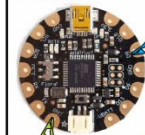
Use glue gun to glue copper/foam piece down to glove, copper side up.

### Step 3:

Place copper piece, adhesive side down, on top of foam piece. Cover with scrap cotton and iron for 3 seconds.



### Step 5: Flora

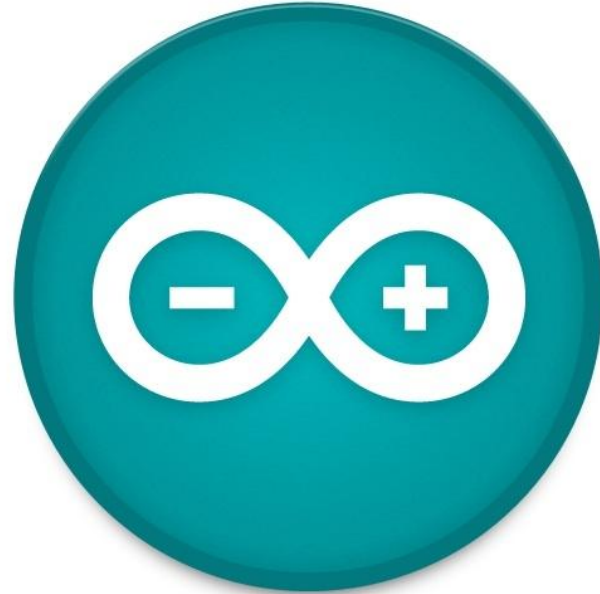


With alligator clips, connect pads to D9 and GND on Flora.

# Arduino Code

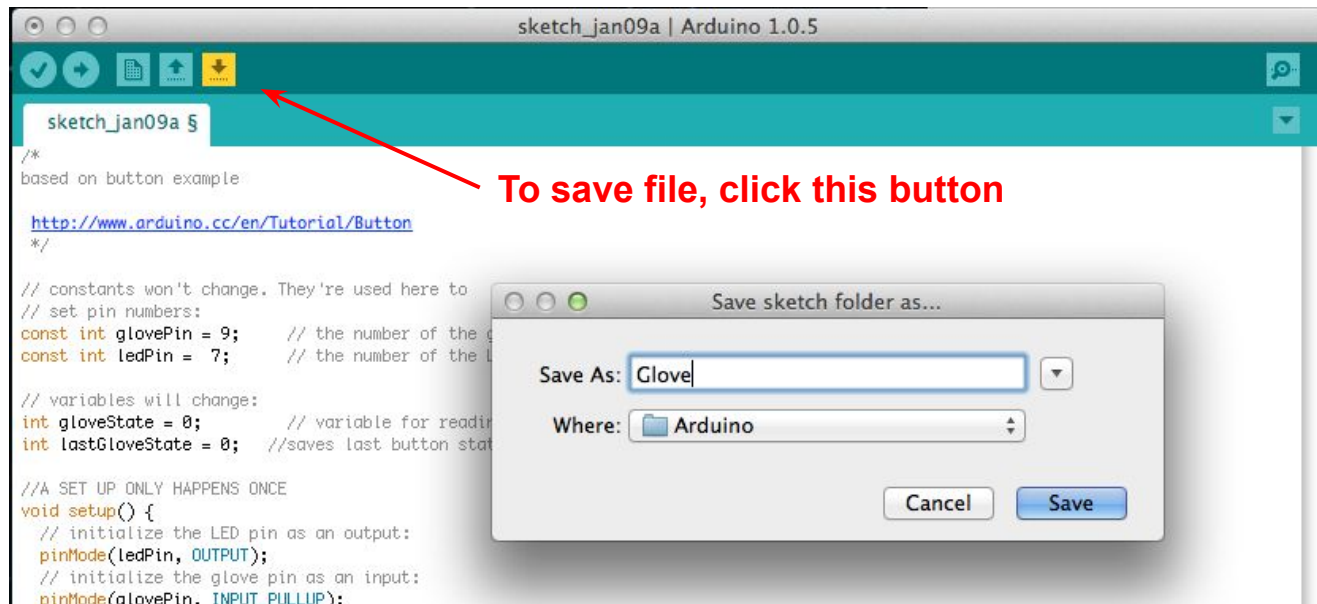
- Use “Adafruit Arduino”
- Code can be found here

<http://bit.ly/2tam7Hy>



# Cut & Paste into Adafruit Arduino IDE

- Cut and paste code into Adafruit Arduino IDE window
- Save Arduino file with new name (whatever you want!)



# Connect Flora Controller to Computer via USB and Upload Code

Make sure in Adafruit Arduino:

Tools >> Board >> Flora

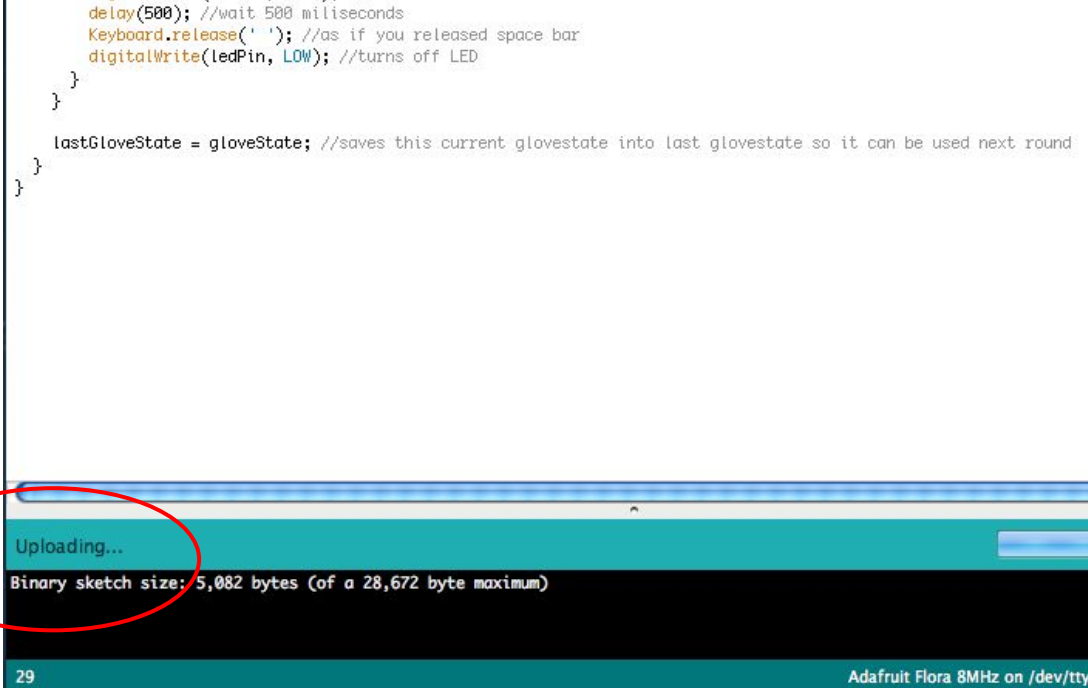
Tools >> Serial Port >> USB (either one should work)





# Uploading

You can check status at bottom left of IDE.



**Then open a Text Edit App & Test Gloves! Does it type out a space when you clap?**

# Review Code

**variables**

**setup()**

*occurs once at start*

**loop()**

*occurs over and over again*

```
sketch_jan09a | Arduino 1.0.5

sketch_jan09a $

/*
 * based on button example
 *
 * http://www.arduino.cc/en/Tutorial/Button
 */

// constants won't change. They're used here to
// set pin numbers:
const int glovePin = 9;    // the number of the glove pin
const int ledPin = 7;      // the number of the LED pin

// variables will change:
int gloveState = 0;        // variable for reading the pushbutton status
int lastGloveState = 0;    // saves last button state

//A SET UP ONLY HAPPENS ONCE
void setup() {
  // initialize the LED pin as an output:
  pinMode(ledPin, OUTPUT);
  // initialize the glove pin as an input:
  pinMode(glovePin, INPUT_PULLUP);
  Keyboard.begin(); //turns on keyboard mimicking
}

//A LOOP HAPPENS OVER AND OVER AGAIN UNTIL TURNED OFF
void loop(){
  // read the state of the glove value:
  gloveState = digitalRead(glovePin); //reads glove
  if (gloveState == LOW) { //if glove is clapping
    delay(50); //wait 50 milliseconds
    gloveState = digitalRead(glovePin); //check if glove is clapping still
    if (gloveState == LOW) { //if glove is still clapping
      if (lastGloveState == HIGH) { //if the gloves were not clapping the last time it looped
        Keyboard.press(' '); //then press space bar
        digitalWrite(ledPin, HIGH); //turn on LED
        delay(500); //wait 500 milliseconds
        Keyboard.release(' '); //as if you released space bar
        digitalWrite(ledPin, LOW); //turns off LED
      }
    }
  }
  lastGloveState = gloveState; //saves this current glovestate into last glovestate so it can be used next round
}
```