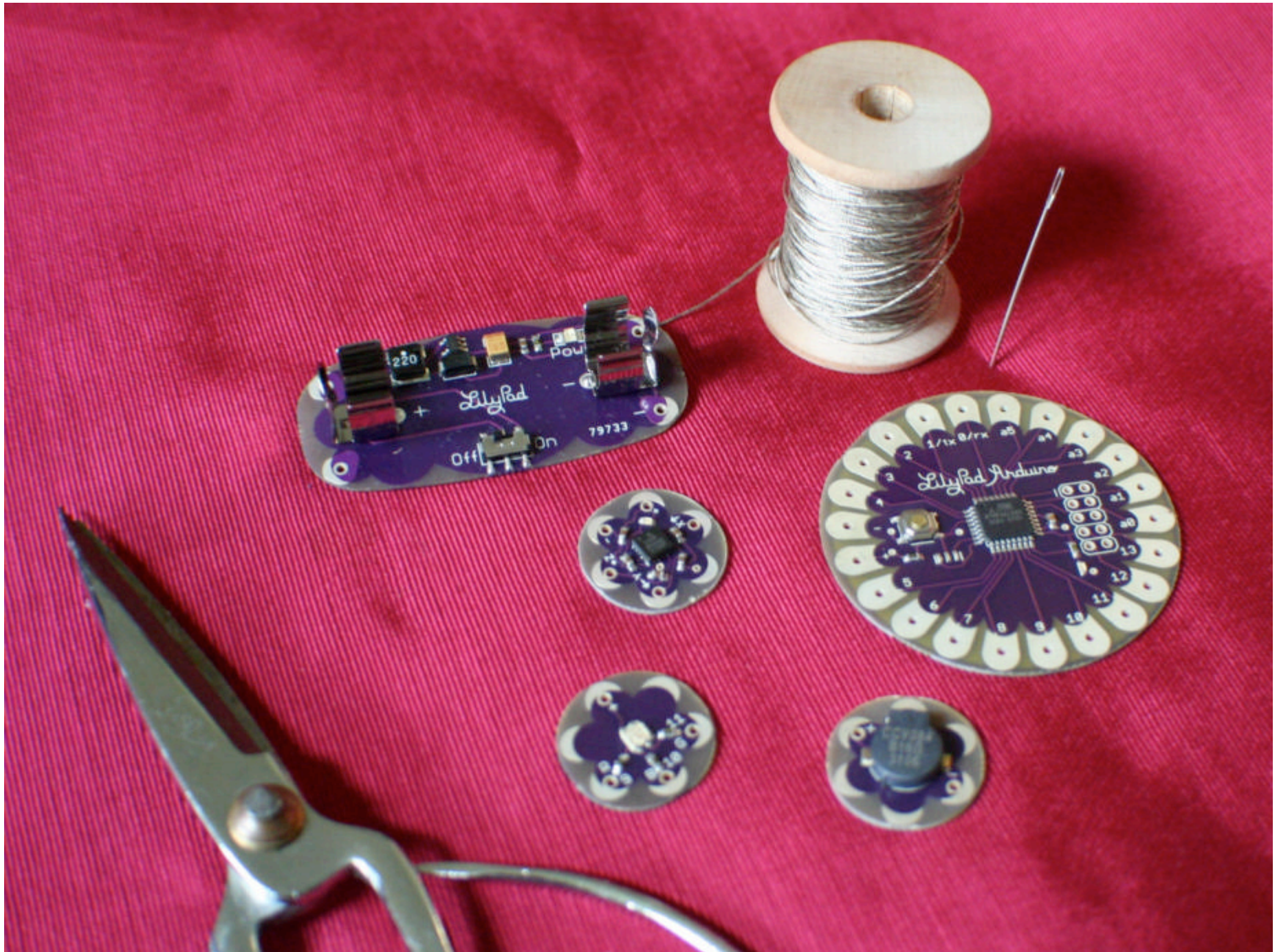


# LilyPad Electronic Fashion

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what we're making



# morning overview

- design
- build, test
- build, program, test
- build, program, test
- play!

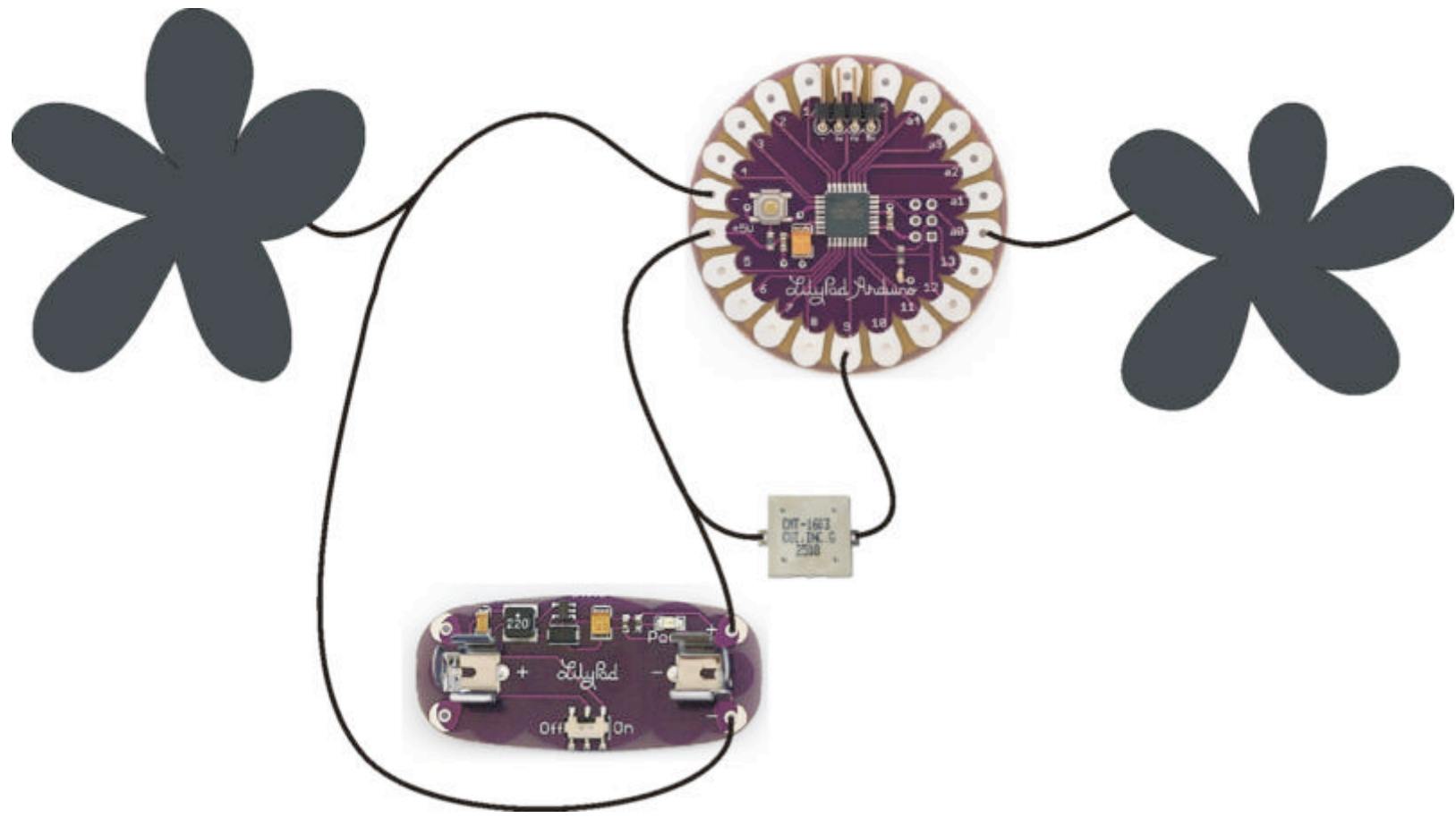
# what you should have

- clothing or accessory
- laptop
- LilyPad Pro kit
  - LilyPad Arduino
  - battery holder
  - programmer
  - USB cable
- LilyPad LED
- conductive thread
- conductive fabric
- speaker
- needles
- AAA battery

# stuff we'll share

- irons
- multimeters
- scissors
- nail polish & glue

design



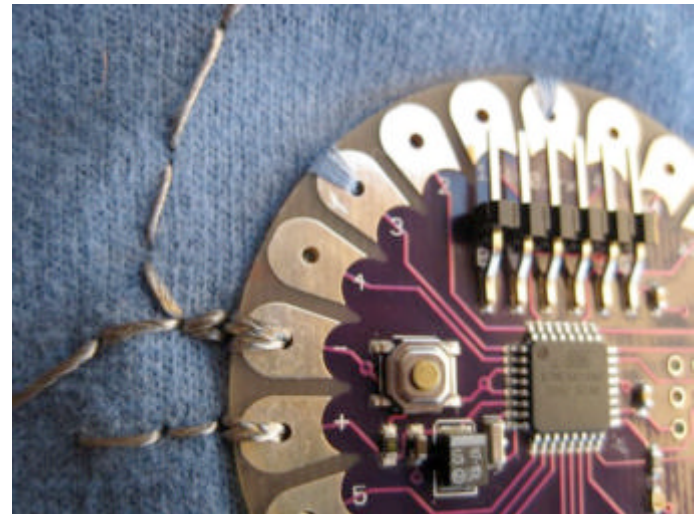
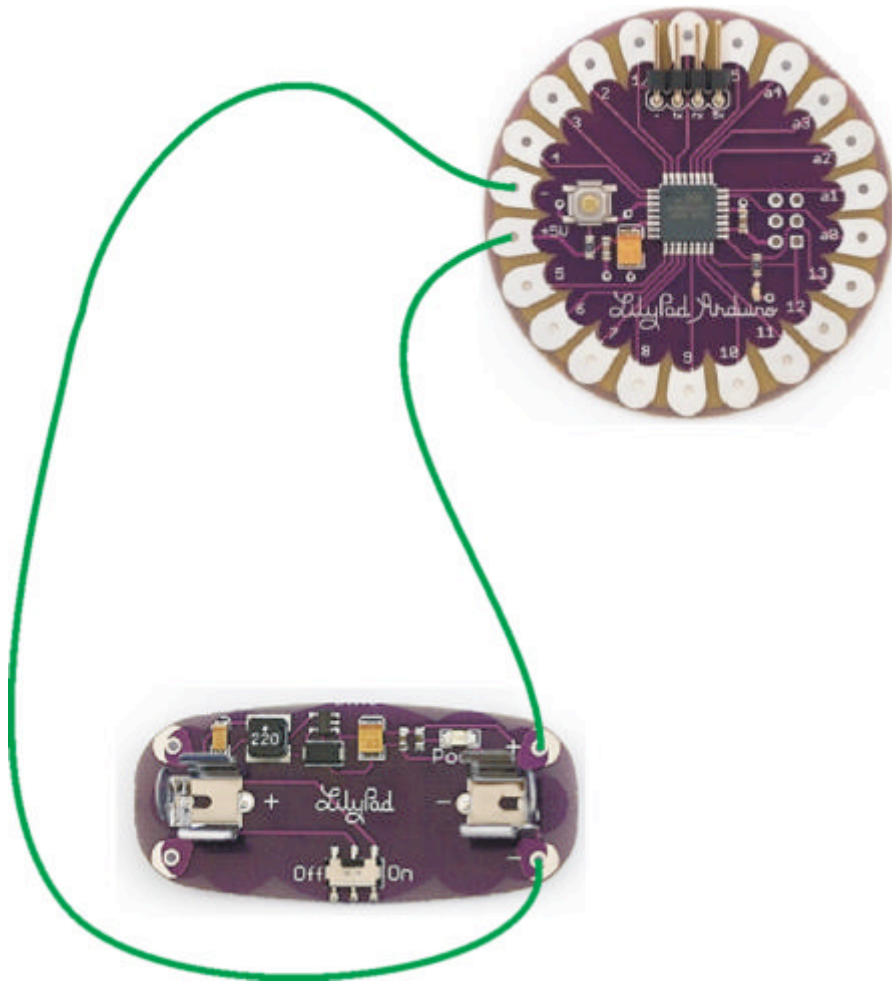
build

step 1: power supply & LilyPad

thread your needle



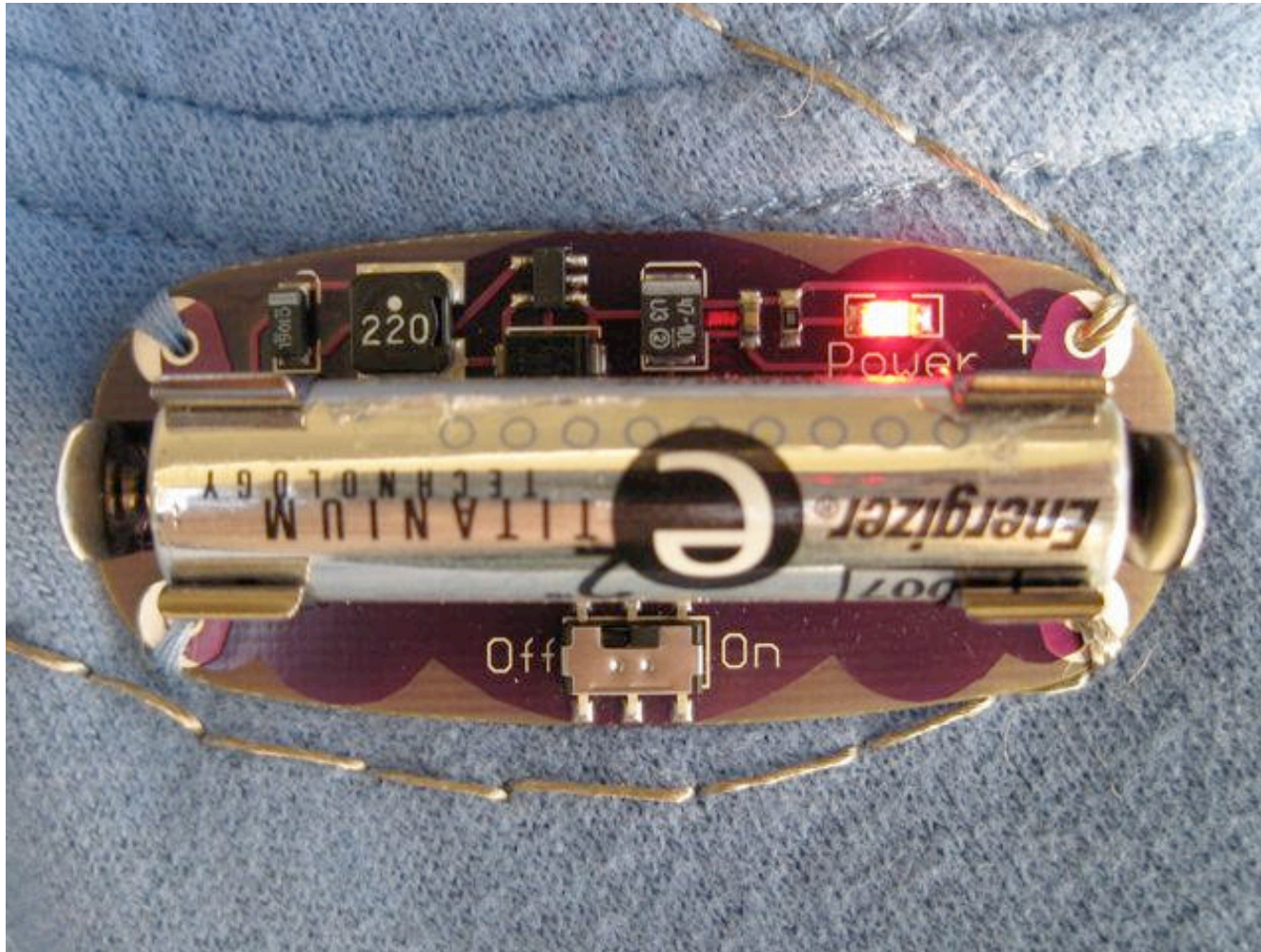
sew + to + and - to -



seal your knots

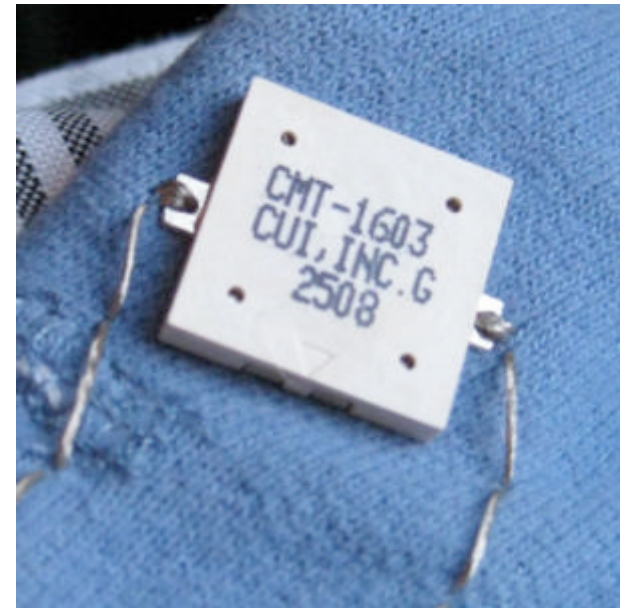
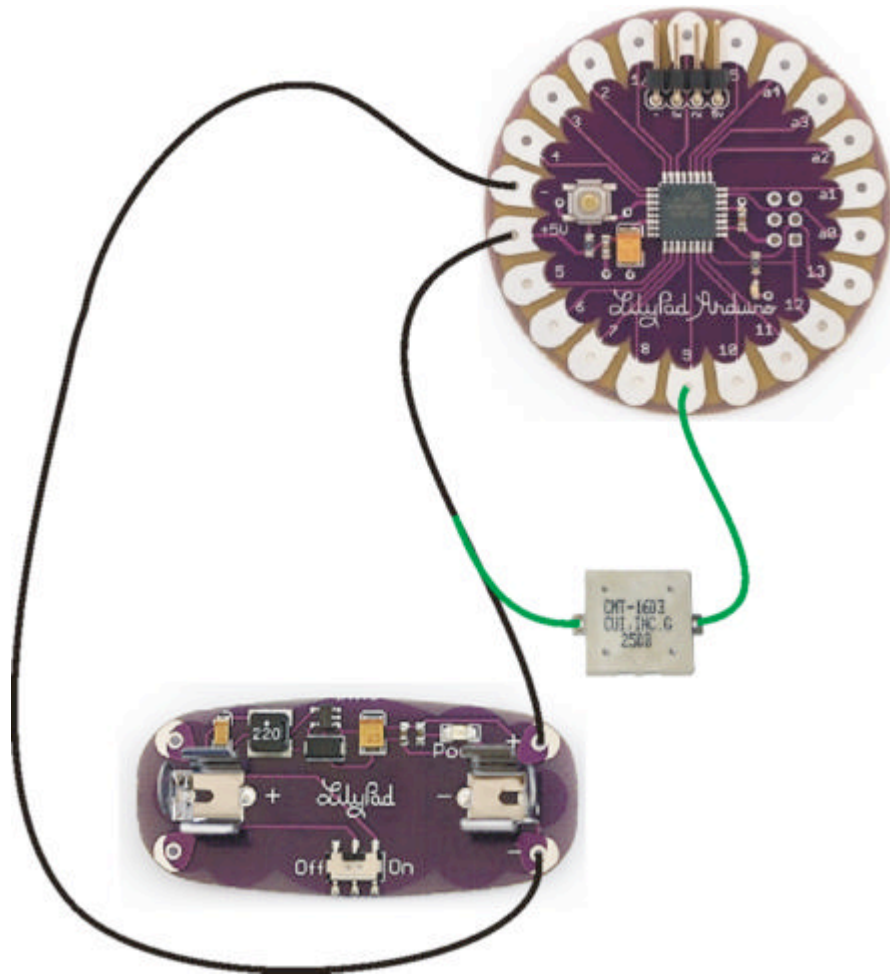


test



step 2: speaker

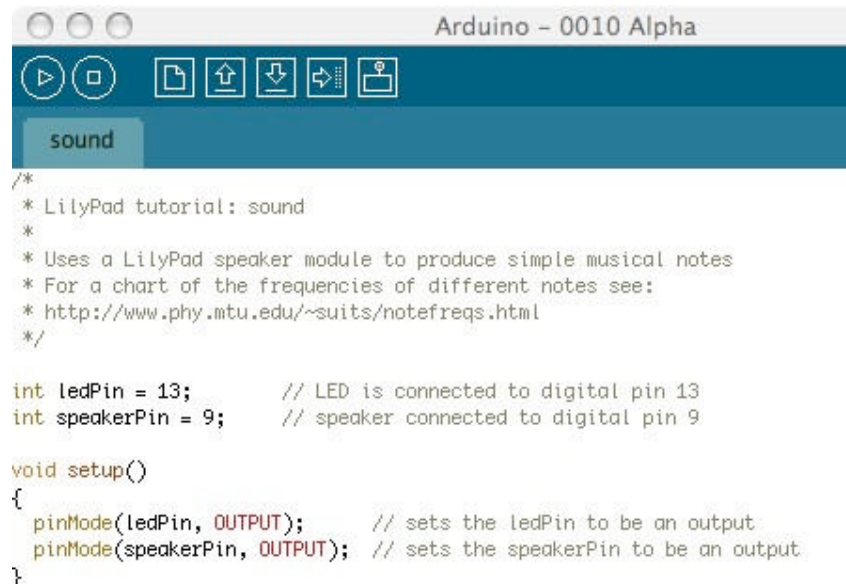
sew one end of speaker to + and the other to pin 9



program & test

# set up for programming

- go to: <http://media.mit.edu/~leah/LilyPad>
- configure the software (2. software install)
- open the sound sample code (7. sound)
- paste the code into your Arduino window



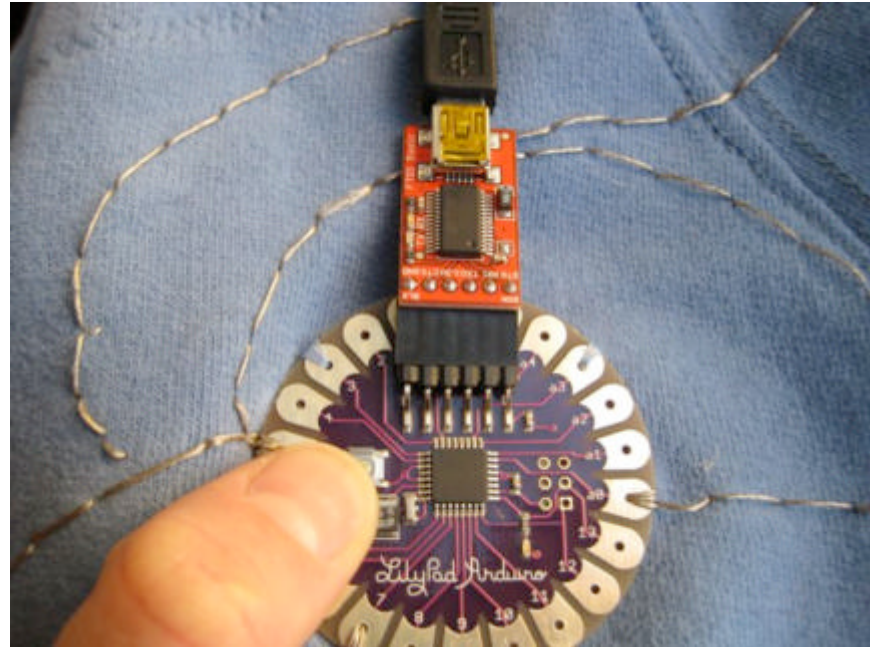
```
Arduino - 0010 Alpha
sound
/*
 * LilyPad tutorial: sound
 *
 * Uses a LilyPad speaker module to produce simple musical notes
 * For a chart of the frequencies of different notes see:
 * http://www.phy.mtu.edu/~suits/notefreqs.html
 */

int ledPin = 13;      // LED is connected to digital pin 13
int speakerPin = 9;  // speaker connected to digital pin 9

void setup()
{
  pinMode(ledPin, OUTPUT);    // sets the ledPin to be an output
  pinMode(speakerPin, OUTPUT); // sets the speakerPin to be an output
}
```

# load the code onto your LilyPad

- go to step #3 on the 4. lights(LEDs) page for reference
- press the reset switch on the LilyPad
- quickly press the upload button in the Arduino software
- wait...and listen



step 3: sensor

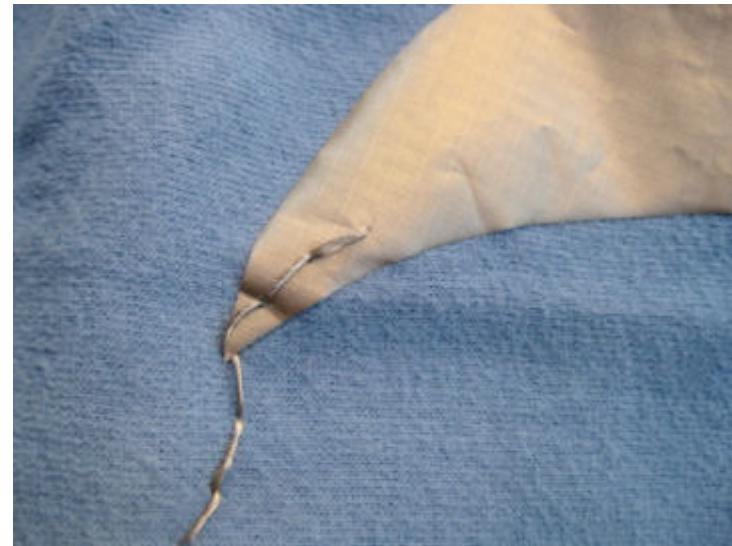
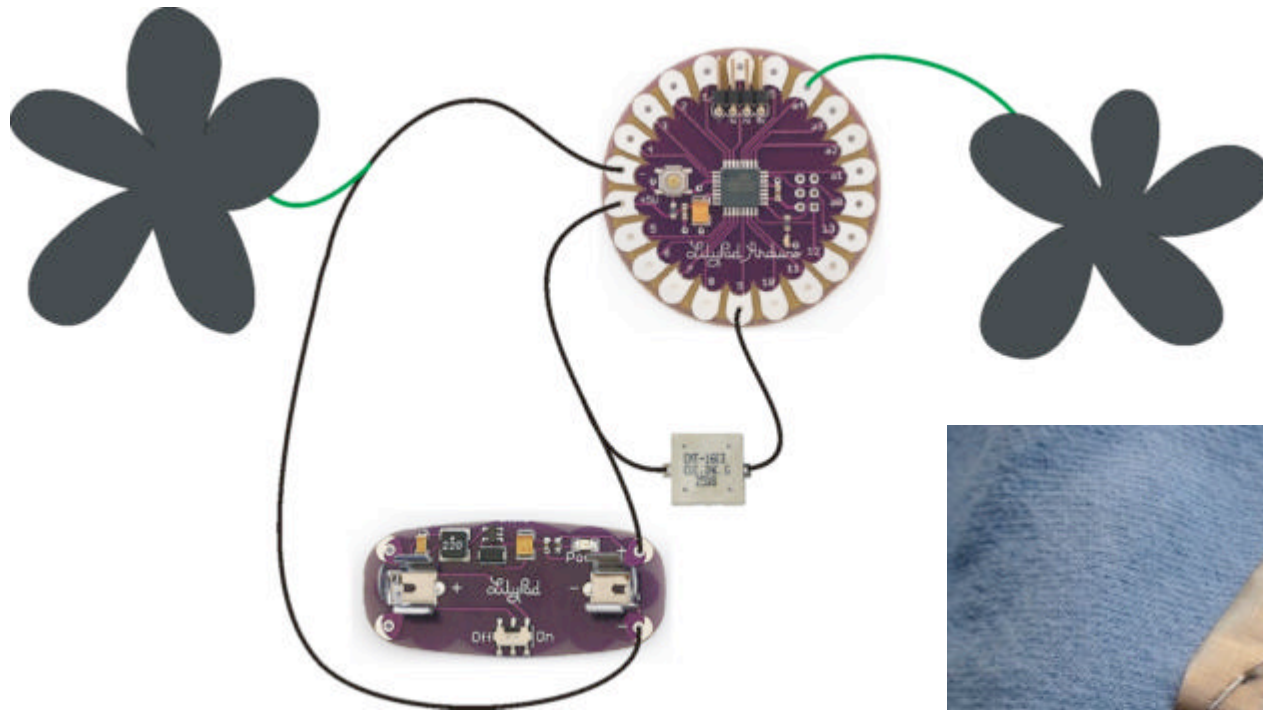
cut out your patches



iron them on



sew one patch of fabric to – and  
one to a0



# program & test

- go to step #3 on the 4. lights(LEDs) page for reference

- code:

[www.media.mit.edu/~leah/LilyPad/etech\\_soundie\\_code.html](http://www.media.mit.edu/~leah/LilyPad/etech_soundie_code.html)

play!

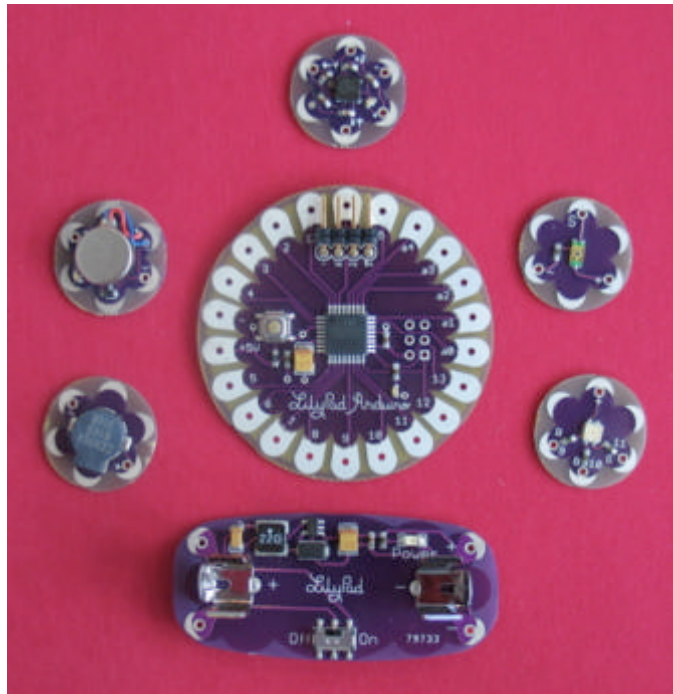
## after today

- washing
  - remove battery
  - hand wash
  - drip dry
- wearing & wear
  - silver tarnishes: silver polish, fabric paint
  - platings crack

## after today cont.

- where to get stuff
  - electronics: SparkFun, Maker Shed, etc.
  - materials: lessemf.com,  
media.mit.edu/~leah/grad\_work
- community
  - Arduino: arduino.cc, ladyada.net
  - LilyPad: Flickr group, LilyPad Arduino tags on Flickr, Instructables, etc.

# Thank you!



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