

G	V	M	L	K
O	I	O	I	I
O	B	B	S	T
D	R	I	T	
A		L	E	
T		E	N	
I		I		
O		N		
N		G		
S				

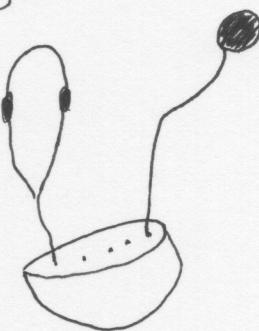


TABLE OF CONTENTS

1. Introduction
2. How the Kit works
3. Overview of kit build
4. Parts list
7. A Quick Note on soldering
8. Other tools
10. Part One: Contact Mic
16. Part Two: Circuit Components
44. Part Three: Enclosure
53. Notes

NOTES

Hi!
Thank you for buying a mobile listening kit and/or attending a mobile listening kit workshop!

My name is Johann Diedrich.
I make installations, performances, and objects that let people play with sound. In 2012, Christie Leece and I came up with the Good Vibrations project. Now, I make these mobile listening kits and lead workshops and listening tours across the world. Soon you will be building your own kit, so lets get started! xo,
Johann

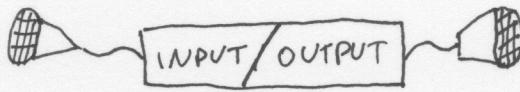
INTRODUCTION

The Good Vibrations Mobile Listening Kit allows you to listen to the subtle sounds in your environment. With the kit & a microphone, you can hear the least audible sounds around you. In this workshop, we will build an entire kit that will let you explore the sounds around you.

NOTES

NOTES

HOW THE KIT WORKS



The Good Vibrations Mobile Listening Kit takes in small sounds through an input (microphone) and makes them sound louder through an output (headphones or speakers). With the kit you can adjust the volume to find the best volume for your listening comfort. ☺

NOTES

PARTS LIST

1 x Circuit Board -

1 x LM358 IC -

1 x LM386 IC -

3 x 10k resistor -

3 x 1k resistor -

1 x 22k resistor -

1 x 10 resistor -

3 x 0.1 uF capacitor -

1 x 220 uF capacitor -

OVERVIEW OF OUR KIT BUILD

NOTES

- ① Contact Mic
- ② Circuit Components
- ③ Enclosure

1 x Switch - 

NOTES

1 x 10K Alpha Pot - 

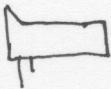
1 x Pot Knob - 

1 x LED - 

1 x LED Bezel - 

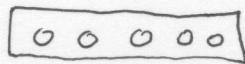
2 x 1/8" / 3.5mm Audio Input - 

1 x 9V Battery - 

1 x 9V Battery Holder - 

NOTESEnclosure

1x Fanny Pack - 

1x Plate - 

Contact Mic

1x Piezo disc - 

1x Audio cable - 

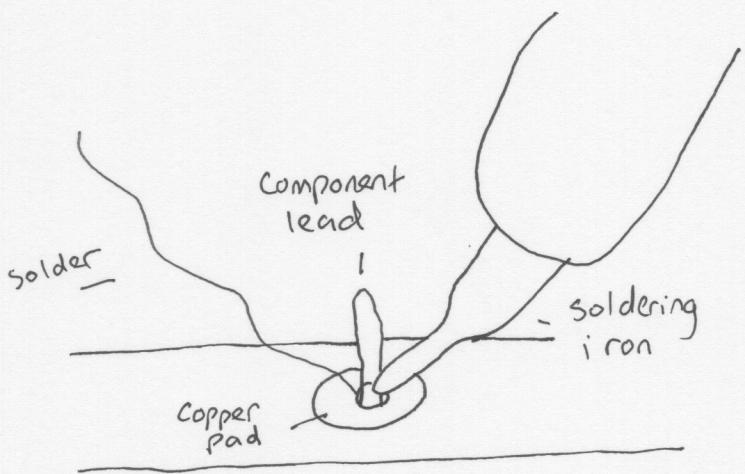
1x Male Mono Jack - 

NOTESOTHER TOOLS

- Soldering Iron
- Solder
- Snippers
- Wire
- Wire strippers
- Multimeter
- Xacto knife

A QUICK NOTE ON SOLDERING!

With a soldering iron, you want it to touch the base of the lead of your component and the copper pad. Feed in a little bit of solder and remove when it looks like it is melted in!

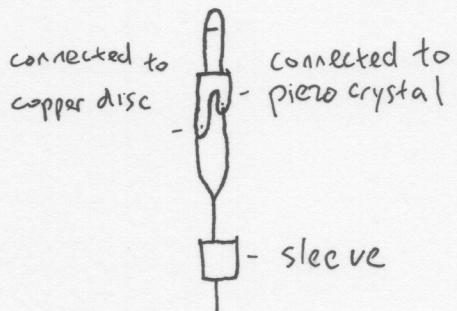


PART 1

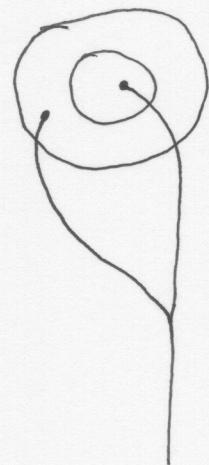
CONTACT MIC

(2) Solder wire to jack.
Make sure to feed wire
through jack sleeve first!

The short end of the jack
should be connected to the
white piezo crystal. The
long end should be connected
to the piezo's copper disc.



① Solder wire to piezo disk.

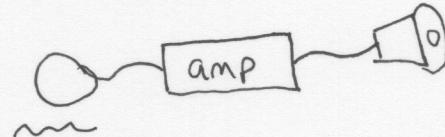


How does a contact mic work?

When sound vibrates the contact mic , it causes the crystals on the disk to compress . This compression generates a small voltage (our weak input) .

We use the amplifier in the kit to translate that small voltage into a bigger one , so that we can hear a loud sound !

moves speaker
back and forth to produce
sound!

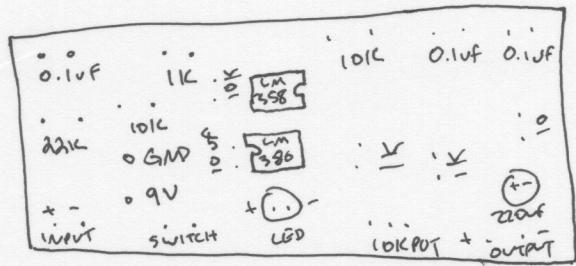


vibration causes
small voltage change
as signal

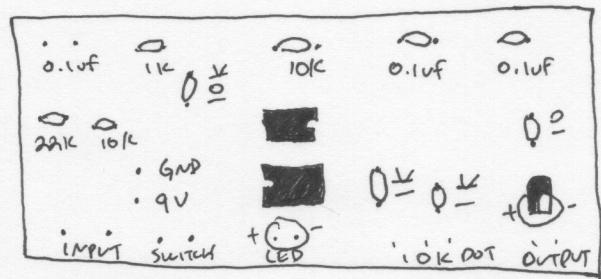
PART 2

CIRCUIT COMPONENTS

UNFINISHED BOARD

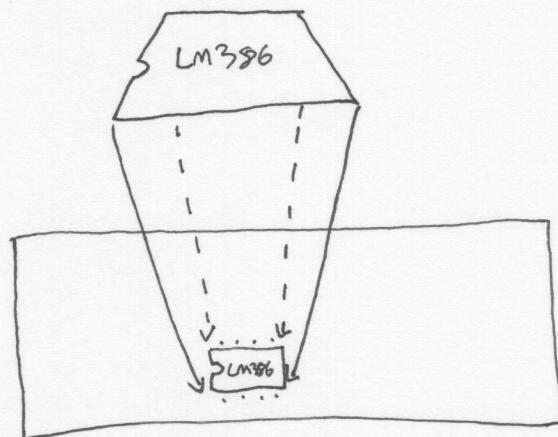


FINISHED BOARD



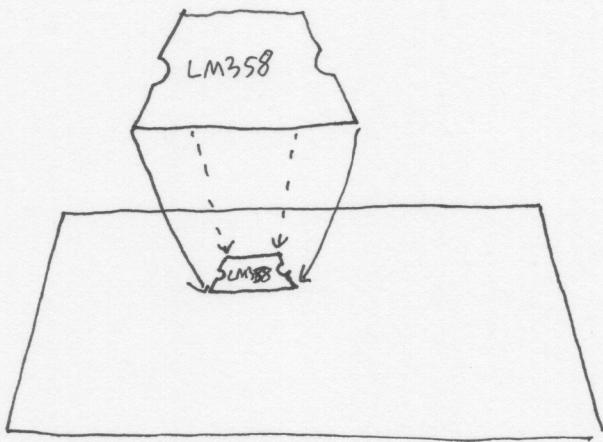
NOTES

LM386



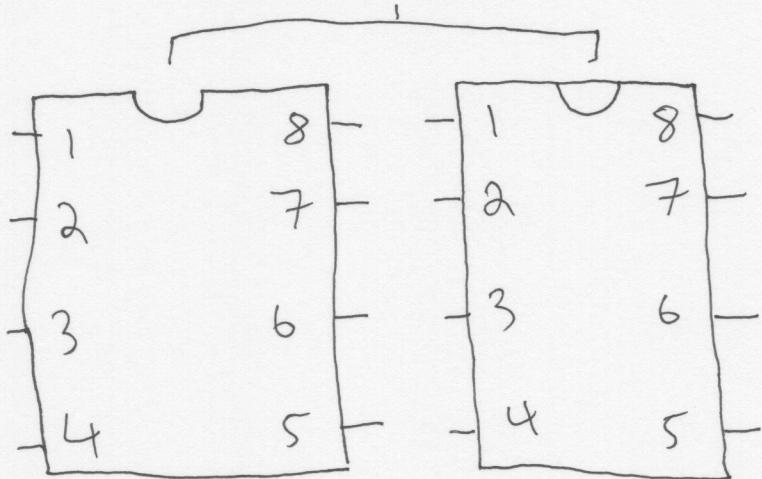
LM358

NOTES

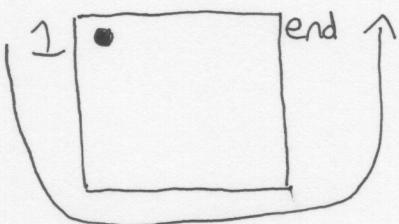


* How to tell chip orientation *

TWO DIFFERENT STYLES



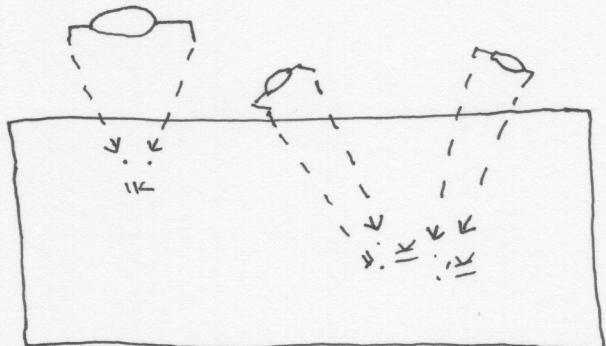
In General ...



*What are these chips doing? *

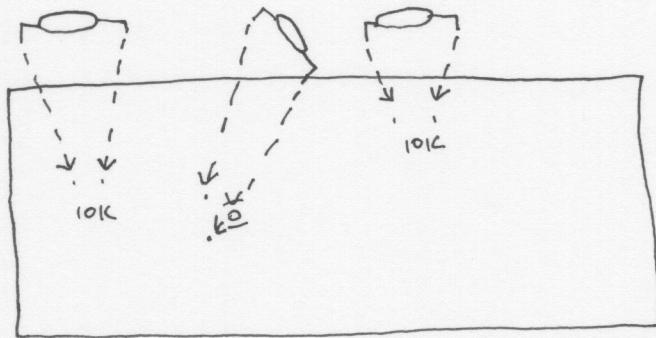
These chips are operational amplifiers (op amps). They take in a small signal and amplify it. We are using these op amps to boost our piezo's signal, which is very weak on its own.

1 K Resistor



Now go out and listen

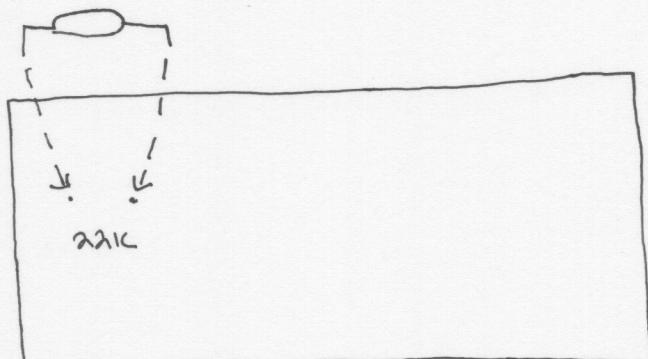
10K Resistor



to the sounds around you!

22K Resistor

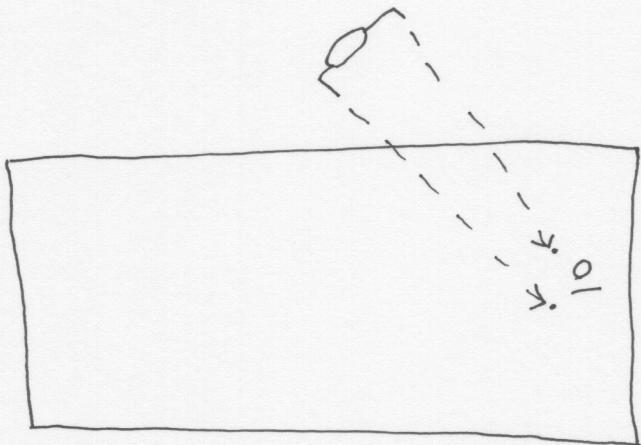
ARE



LATIONS!

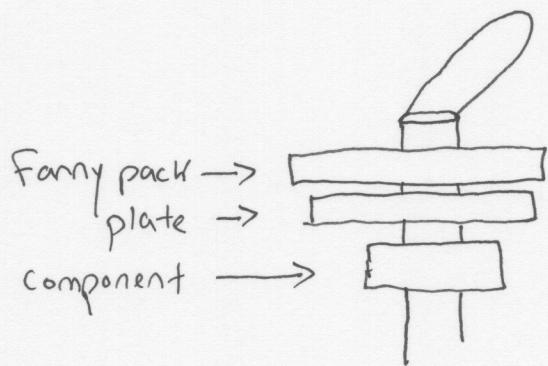
WE

10 Resistor



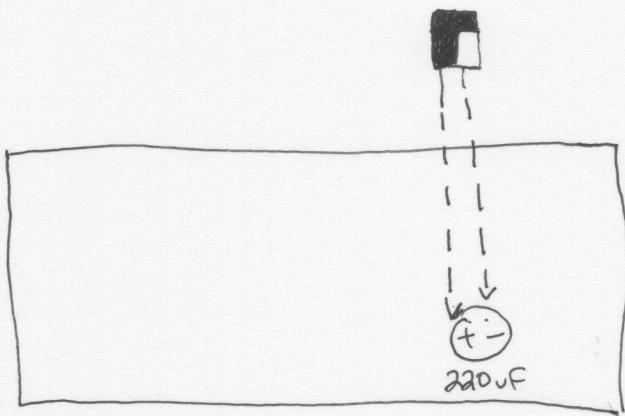
C O N G R A T U

- Push components through holes



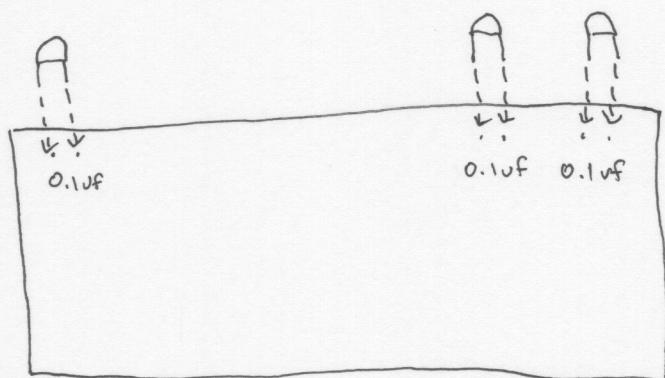
- use xacto to cut holes
in fanny pack to push
components through

220 uF capacitor



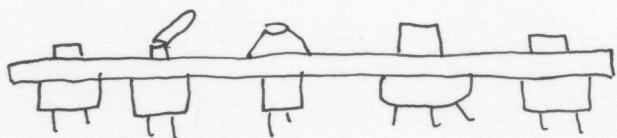
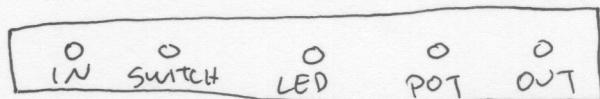
0.1 uF capacitor

- Tighten components
 - Add nuts/washers

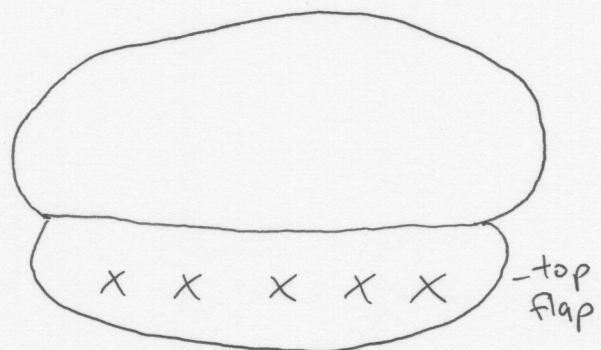


Stand up, stretch and take a

- Put components in plate



- Cut holes in fanny pack

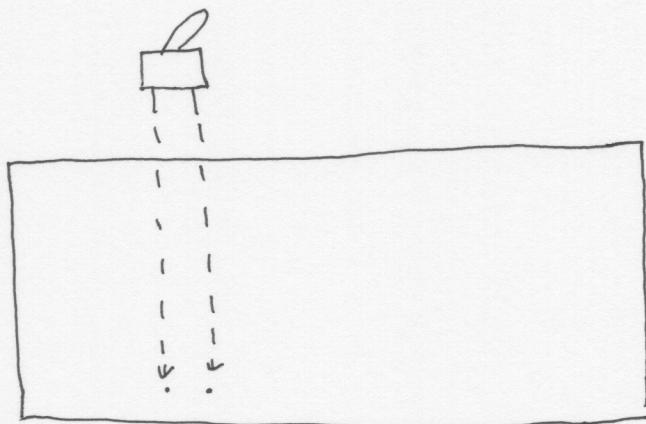


You deserve it ☺

PART 3

ENCLOSURE

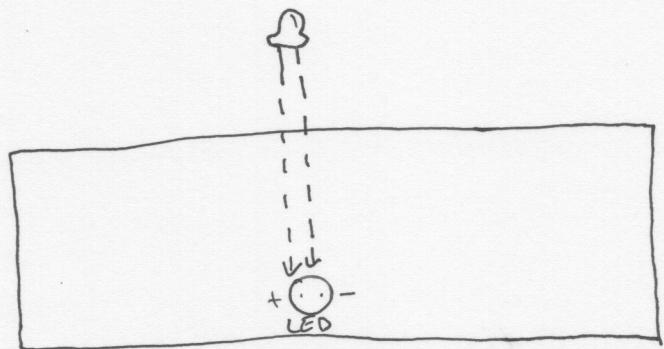
SWITCH



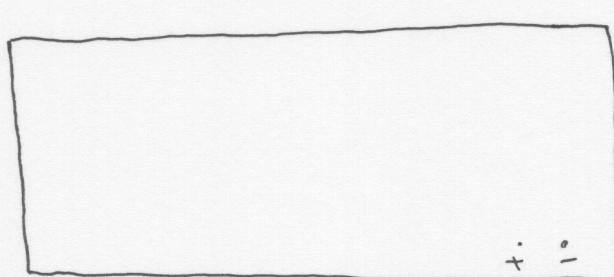
Almost there...

Time for another

LED



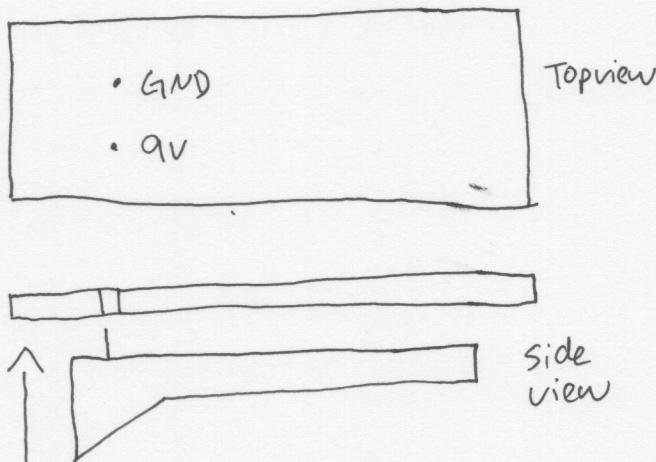
AUDIO OUTPUT



TEST!

- Plug in battery
- Flip the switch
- The LED should turn on!

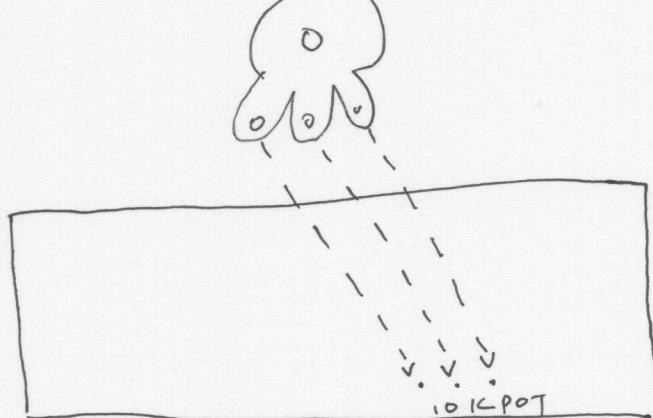
BATTERY



TEST!

- Plug your contact mic into audio input
- Plug your headphones into audio output
- Turn the volume down
- Turn on the switch
- Turn up the volume
- Put on the headphones & hear the sounds!

10K POTENTIOMETER



AUDIO INPUT

