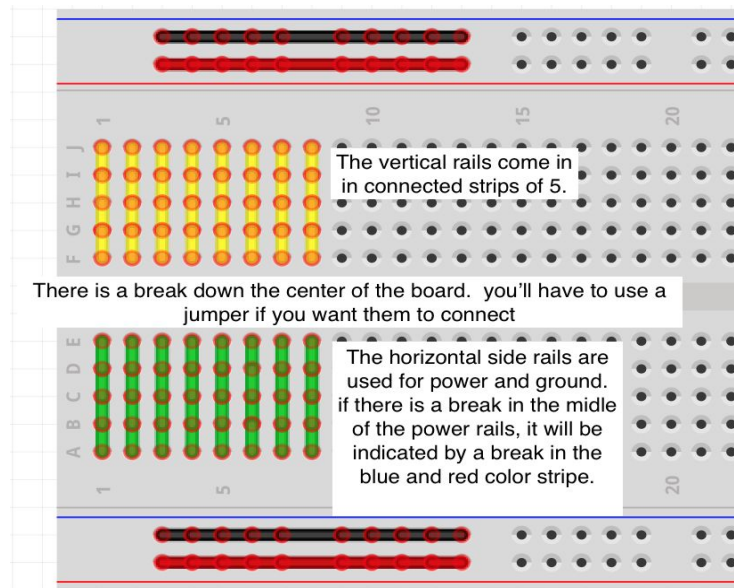
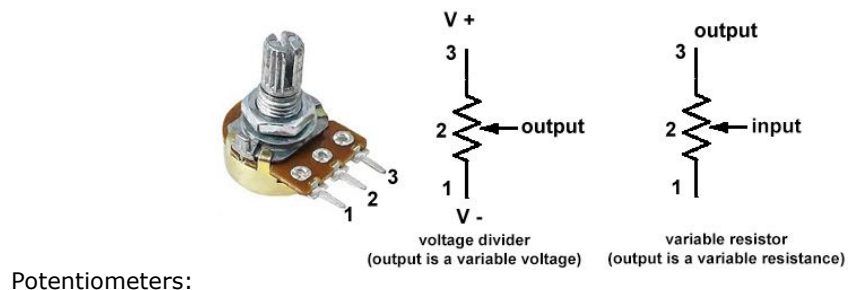
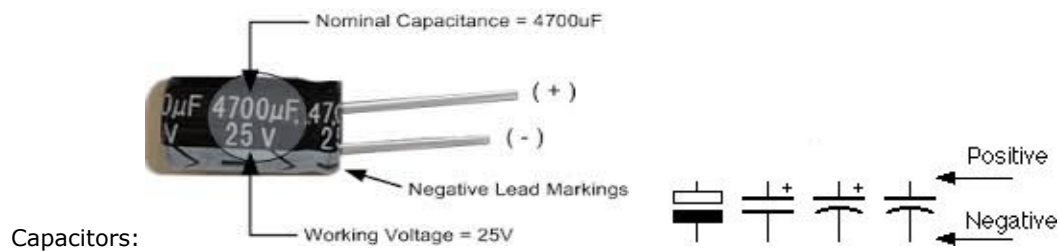
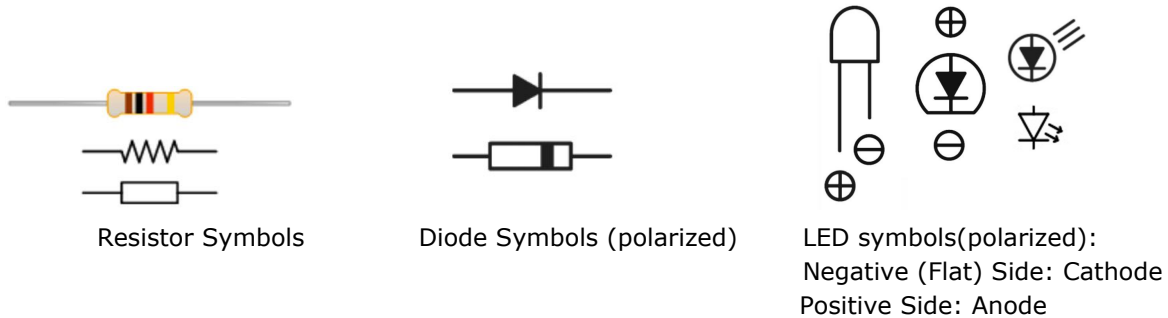
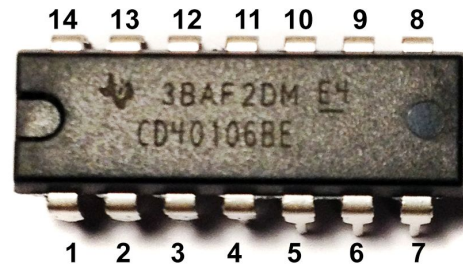
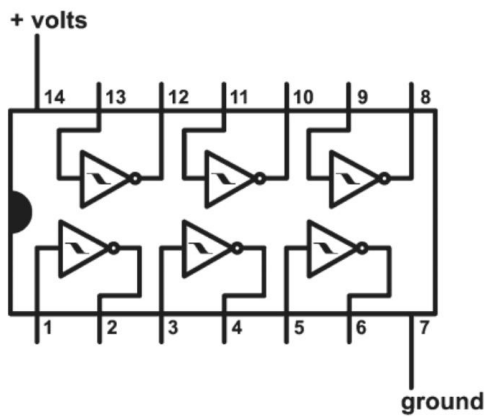


Example of a breadboards internal wiring

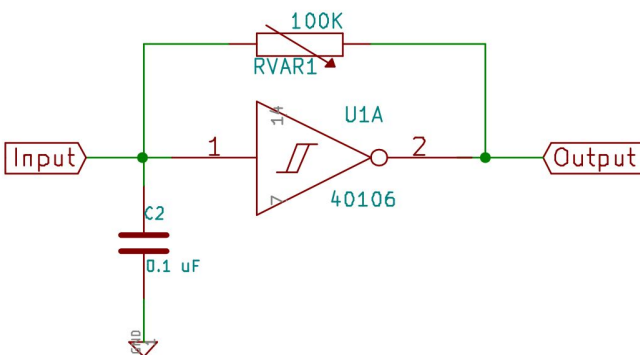


Examples of various schematic symbols and how to read them.

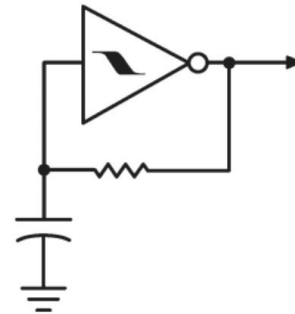




40106 IC Pinout and IC

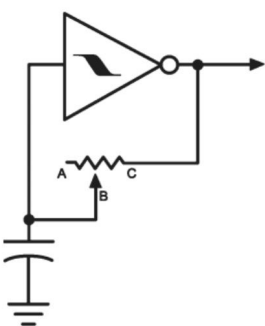


Simple 40106 oscillator schematic drawn with Kicad software

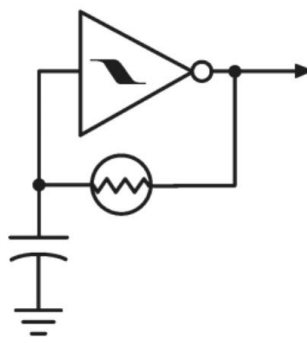


Simple 40106 oscillator schematic

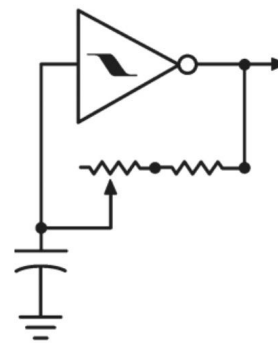
Wiring variations for the 40106



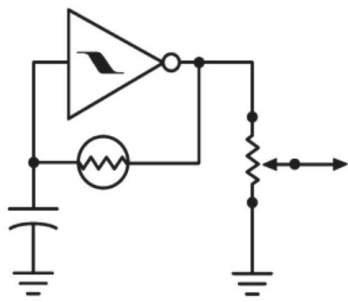
potentiometer controlled tunable oscillator



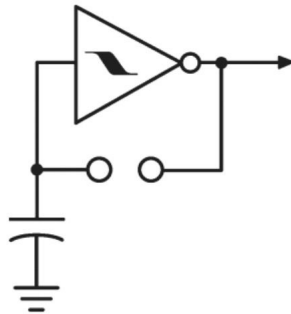
photocell controlled oscillator



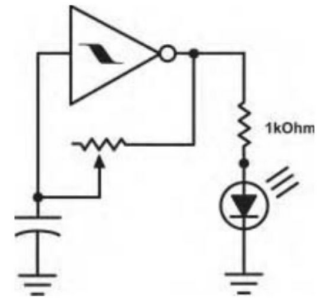
Fixed upper frequency limiter



output volume control

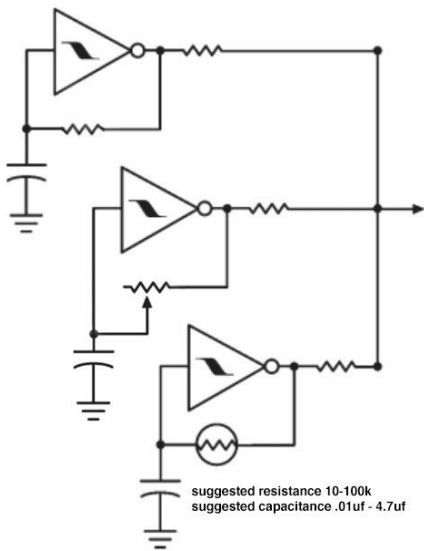


Electrode controlled oscillator
the electrodes can be bare
wires, metal touchpoints,
get creative with this!

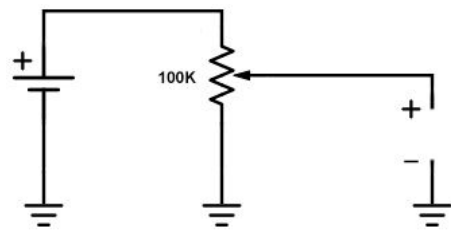


Potentiometer controlled LED flasher
(can be used as indicator light
or with photocell for modulating
different effects)

Experiment with different sensors! flex sensors, pressure sensors, stretch sensors, graphite on paper, different metal objects as touch points, etc. Different resistive sensors will have 2 or 3 leads, and can be wired up similar to a potentiometer (3 leads) or a fixed resistor (2 leads)

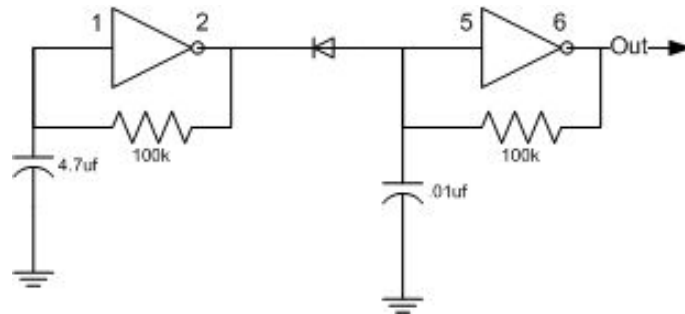


Using Resistors to mix together outputs (10k suggested)

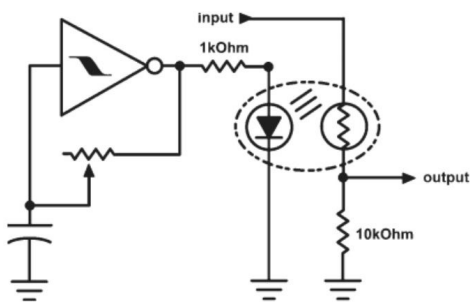


Using a potentiometer to starve power to the
40106 for more strange oscillator sounds

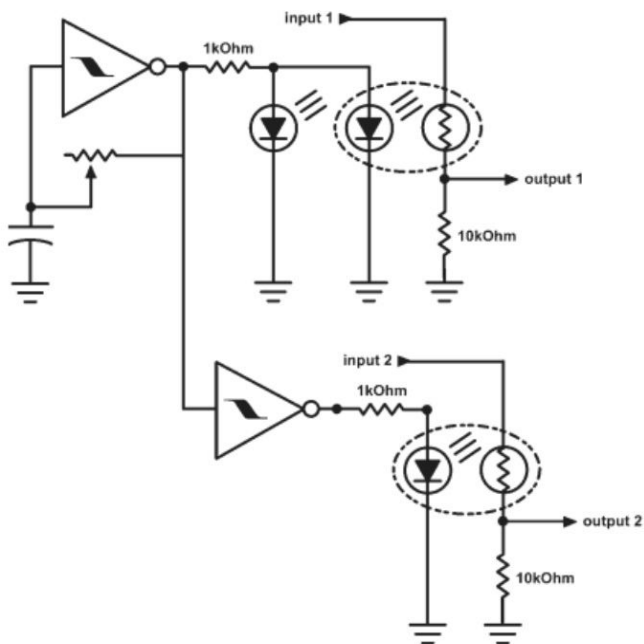
Using a diode to drive oscillators into each other



You can use an LED and photocell together to act as a variable resistor. These examples will duck the volume according to the brightness of the LED.



LED controlled Strobe Gate:

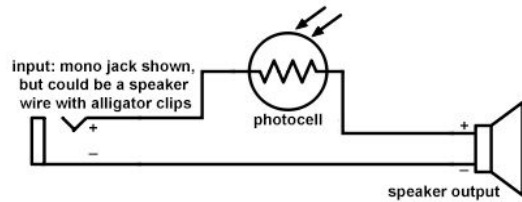


Blinking LED controlled Panner/Mixer:

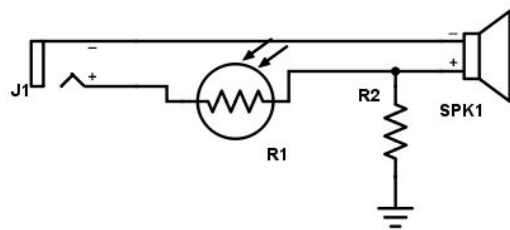
The output volume will pan back and forth between the two outputs.

The 1kOhm is a limiting resistor for the LED, and the 10K ohm is an upper frequency limiter

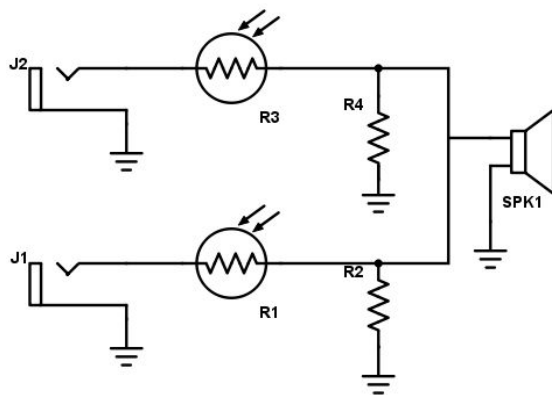
Examples of how Photocells can be used for mixing and panning different audio inputs and outputs:



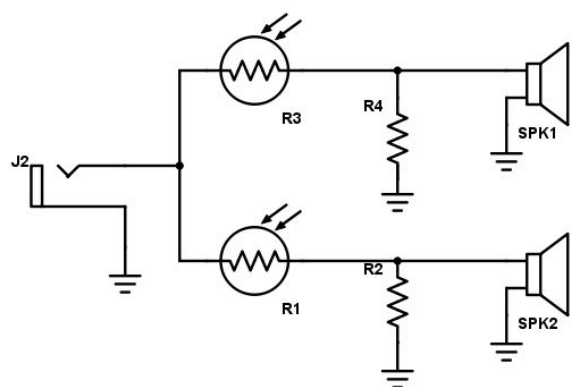
basic photoresistor gate circuit (ground symbol excluded)



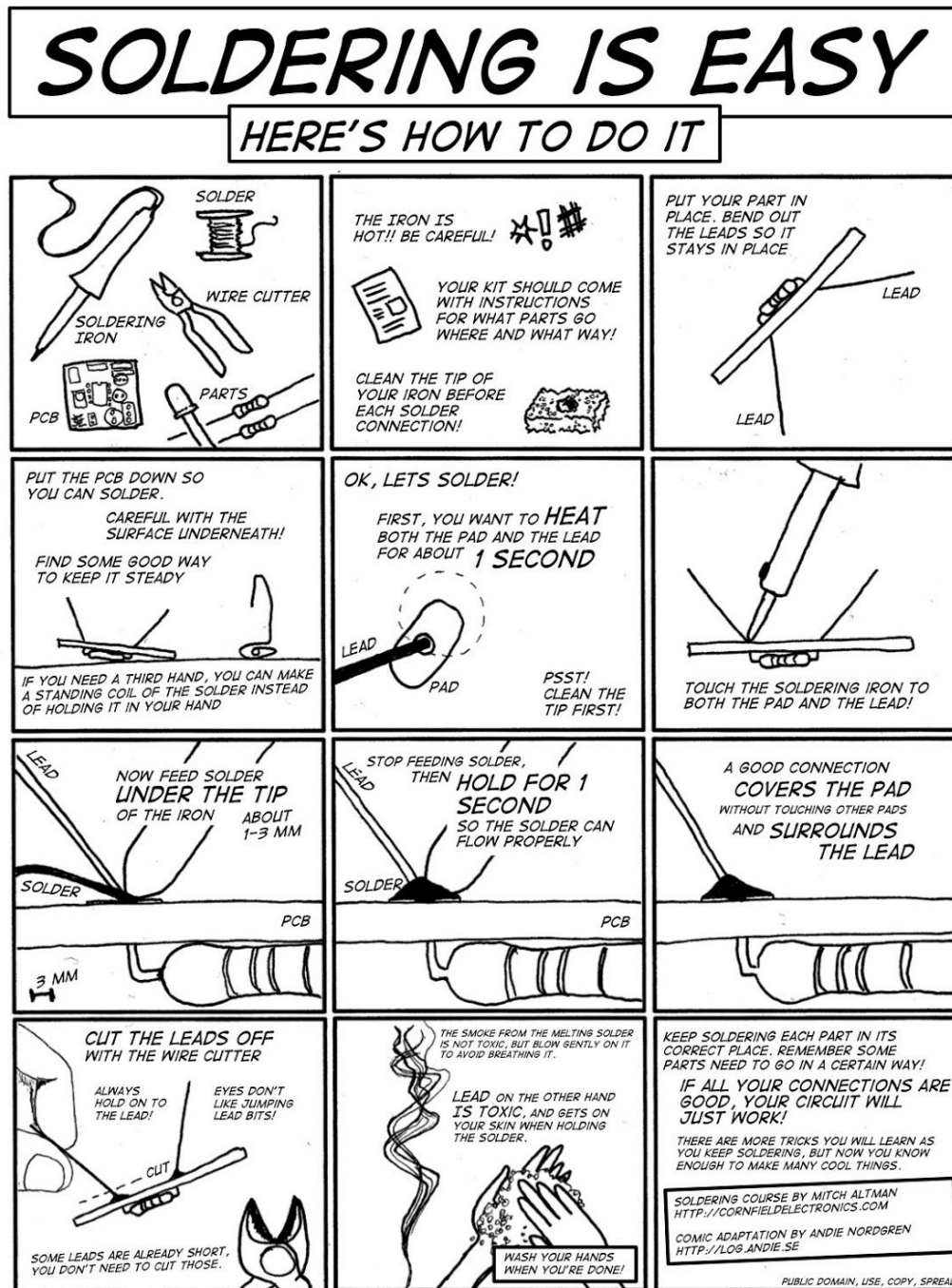
light controlled volume control



Light controlled stereo to mono mixers



light controlled mono to stereo panner



Soldering comic from CornField Electronics.com

Most circuit diagram images from Nicolas Collins "Handmade Electronic Music"

Suggested Reading: Adafruit tutorials, Sparkfun tutorials, Make: Electronics: Learning Through Discovery by Charles Platt, "Handmade Electronic Music" by Nicolas Collins

Dallas Shoutouts: Thanks to the Dallas Makerspace, a 24 hr hackerspace with a fully functioning electronics lab, with lots of components available for free for artists to utilize. There is lots of help available there if you are looking for local electronic mentorship, and Tanner Electronics is a great resource for purchasing individual electronic components.