

## Steps:

## I. Layout:

Decide what components go where, mark with pencil

Welcome to use mine as model

→ But mine barely fits with new boards

Note: easy to cut boards down to fit if needed

Make banana inputs  $\frac{3}{4}$ " spaced using ruler

## II. Drill holes

Use press

- wood back stop

- safety goggles

- clamp piece in can hold by hand for small ( $< \frac{1}{4}$ " ) holes

- when placement is critical, start with small pilot hole

Can use battery holder as template

## III Install components

Mostly held by nuts: tighten firmly with wrench

Screws & nuts for battery holders will be provided

LED glues into place with 5-minute epoxy

Due 11/26, right after break

Last phase:

- Solder board to case

- Test & debug

- Label & document

Due 12/13, reading day during finals  
(due before I get in on 12/14)

Talk about final phase now

Work days Sunday 12/2, 12/9

Connecting board to case:

Follow circuit diagram

Notes:

- SP3T switch has tricky connections, see handout
- Can use heat shrink tubing to insulate where needed
  - don't overuse: hard to take off
- Need extra 1k resistor, not on parts list
  - Can take from lab supply
- Need 2 9V batteries, get from store

Testing:

- I'll check circuit gains, battery & ext. power operation, battery check
- When testing, make sure to attach reference input to ground

Documentation:

- All components on case clearly labelled
- Box itself labeled with a title ("Differential Amplifier")
- Printout with circuit diagram, key specifications, & instruction for use. (Include explanation of reference input.)

Doesn't need to be long. Target audience = you in two years.