Mini Owl Instructable (oit.edu/miniowl)
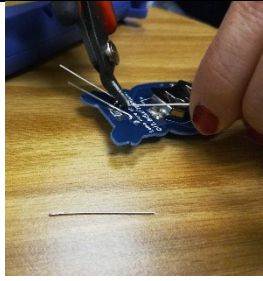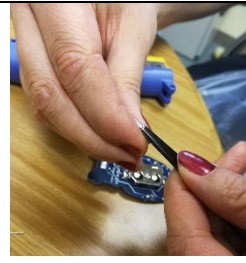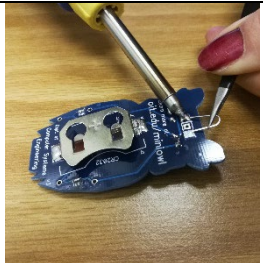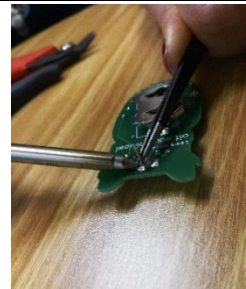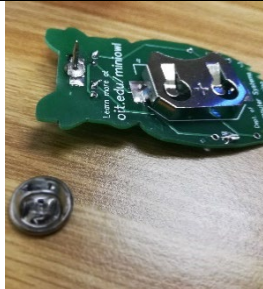
Preface: This project is meant as a fun, cost-effective way to introduce high school students to electronics and Computer Engineering and Oregon Institute of Technology.[1]

Purpose: Participants in the Mini Owl Project will be able to:
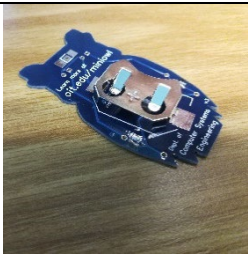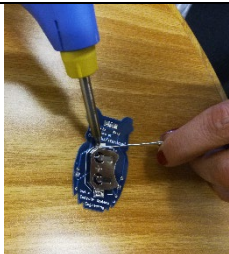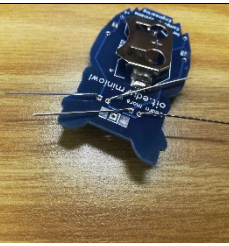
- Learn how to solder through hole components
- Understand how to assemble a PCB as well as the circuit components involved
- Identify components and how to connect them together to illuminate LEDs

Tasks:

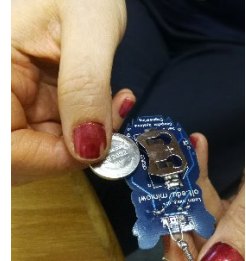|		
		Equipment and Supplies: *Equipment Needed:* Soldering iron, safety glasses, tweezers, mini pliers *Supplies in Kit Needed:* Mini Owl Board, 2 LEDs, Battery, Battery Holder, Earring loop or lapel pin.
		Step 1: Use solder to create a bridge on the back of the MiniOwl board. This bridge will help the whole board to include a complete circuit. Without the bridge, the circuit would be incomplete, and the eyes would not light up. Originally, the board had a resistor here, but the final design does not include that resistor.
		Step 2: Use solder to attach the battery holder on the back of the MiniOwl board. The battery holder should be positioned so that the edge with a "c" shape is on the right side and aligns with the white lines on the back of the MiniOwl board. Use solder to attach the battery holder by soldering on the large metal soldering pads at the top and bottom of the battery holder.
		Step 3: Insert the LEDs into the eye holes. Notice that the LED has two legs, a long leg and a short leg. The long leg is positive, and the short leg is negative. Notice that each eye has two holes, a round(negative) and square(positive) hole. Insert the LEDs into the proper holes, taking care to align polarity properly.

		Step 4: Solder and trim the LED's. Apply a little solder to each of the four led legs on the back side of the mini Owl board. Then use the pliers to trim the legs. If you are making an earring, be sure to save at least one of the leg trimmings.
		Step 5a for earring configuration: Add the earring dangle loop. Use one of the leg trimmings to make a U shaped piece by folding it over the tweezers. Then use the pliers to trim the piece. (Not shown: add the earring hook to the U shaped piece, taking car to make sure it is facing the right direction.) Then use the tweezers to hold the U shaped piece and solder it to the pads at the top of the Mini Owl.
		Step 5b: Lapel pin. Separate the pin clasp from the pin itself. Solder the pin to the Mini Owl as shown in the second picture, using the solder pads at the top of the Mini Owl.
	Step 6: Insert battery and wear. Insert the battery with the negative side next to the Mini Owl board and the positive side towards the battery holder. The Mini Owl should now be ready to wear!	

Please remember to complete our survey!

Thanks!

Team Mini Owl