

(40 pts) Approx. 3 days

The first project option is to build a small electronics project by identifying various electronics components and then soldering them into place. In this part of the unit, you'll learn what some basic electronics parts are, how to read a printed circuit board, how to assemble a simple electronics project, and how to solder. This will require patience and precision, because poorly soldered connections can ruin the project!

1. Start by watching the introductory videos on our website, *Introduction: How to Solder*, *Introduction: Electronic Components*, and *Building Your Electronics Project*. Take at least a full page of notes on these topics. Be sure to focus your notes on how to get the right pieces in place for your project, as well as the process of soldering.
2. Next, get your electronics project kit from Mr. Benshoof. Match up the parts with the *Build Diagram* to make sure that you have all the parts necessary for completing your project!
3. Identify which piece will go where when you assemble your work. Be sure to make note of:
  - a. WHICH DIRECTION your LEDs will need to be installed
  - b. WHICH DIRECTION your 9V battery clip will need to be installed
  - c. WHICH DIRECTION your sockets will need to be installed

***If you install those components backwards, your project will not work properly!***

4. Find a soldering station in the robotics room and get to work! You'll need to carefully solder every connection one at a time! Be patient, take your time, and make good soldering connections.
5. Confirm that your electronics project works properly and have Mr. Benshoof check off your completed project!

*Hints: Most of the pieces have a DIRECTION, which means you need to install them in the proper order!  
 Messy soldering ruins projects – keep your soldering connections neat and tidy!  
 If the electronics project doesn't work, it's because you put it together wrong – take your time!*

Part 1: Tasks	5 points	4-3 points	2-1-0 points
 Electronics/Soldering Notes	+ You took a full page of notes on soldering and the electronics project + Your notes include details on how to solder and the different electronic components that will go into the project	- Your notes are less than a full page - Your notes do not include details on soldering - Your notes do not include details on parts	- Very brief or no notes in your engineering notebook
 Plan Project Assembly	+ You confirmed that you had all the needed parts for your project + You made a small plan/diagram for how you will assemble your project	- You did not double check your provided parts - You did not make a plan/drawing	- No planning is apparent
	<b>30-24 points</b>	<b>23-15 points</b>	<b>14-0 points</b>
 Build Electronics Project	+ You completely built your electronics project + Your project works as intended + Soldered connections are neat	- You built your project but there are significant errors - Messy soldering has ruined some connections	- You did not build your project

