(40 pts) Approx. 3 days

The second part of our unit has you work with a partner to build and program a functioning robot. To do this, you'll start with a booklet of basic LEGO instructions, and you'll build a robot that matches the instructions as closely as possible. This beginning robot will be used to accomplish the 4 "First Challenges" for your LEGO robot.

1. Work with your partner to build a basic LEGO robot. Be sure to follow the LEGO Mindstorms instructions as closely as possible. If you need to occasionally substitute different parts, that's okay… but your final robot should look very much like the one the instructions were asking you to build.
2. Watch the video resources on our website including *Building Your LEGO Robot* and *Programming in RobotC*. Take a full page of notes on the programming information.
3. Work with your partner to plan and program your robot to complete EACH of the following "First Challenges":
    a. **First Challenge #1:** Program your robot to drive *forward* for 3 seconds. Stop. Then drive *backward* for 3 seconds.
    b. **First Challenge #2:** Program your robot to drive from one edge of a white lab table to the other, turn around, and then drive back to it's starting point. The robot should be able to do this without ever falling off the table.
    c. **First Challenge #3:** Program your robot to drive in a large figure-8 on the floor.
    d. **First Challenge #4:** Program your robot to drive from our main classroom, through the robotics room, around the corner in the computer lab, and back through the office space into the main classroom.
4. Have Mr. Benshoof confirm your completed challenges as each one is accomplished!

Part 2: Tasks	5 points	4-3 points	2-1-0 points
⊕ Build Simple LEGO Robot	+ Work with your partner to build your LEGO Robot + Follow the instructions as closely as possible	- You deviated significantly from the instructions	- You did not work with your partner - Your robot is not complete
☐ Notes on RobotC Programming	+ Watch *Building Your LEGO Robot* + Watch *Programming in RobotC* + Take 1 page of good notes in your engineering notebook	- Less than a full page of RobotC programming notes	- Very brief or no notes in your engineering notebook
⊕ Complete First Challenge #1	+ Program your robot to successfully drive forward and backward on the floor.	- Your robot does not fully accomplish the designated task	- Your robot does not come close to accomplishing the task
⊕ Complete First Challenge #2	+ Program your robot to successfully drive around your table	- Your robot does not fully accomplish the designated task	- Your robot does not come close to accomplishing the task
⊕ Complete First Challenge #3	+ Program your robot to drive in a figure-8 on the floor.	- Your robot does not fully accomplish the designated task	- Your robot does not come close to accomplishing the task
⊕ Complete First Challenge #4	+ Program your robot to drive a loop through the engineering room and computer lab	- Your robot does not fully accomplish the designated task	- Your robot does not come close to accomplishing the task
	Up to 10 points		
☑ Take the Unit 3 Quiz!	+ You took the Unit 3 Quiz. + Your grade is based on the number you got correct	N/A	- You did not take the Unit 3 Quiz