

Robotics I Lesson (4-6-20)

First things first: Are you able to receive these lessons???

Send me an email if you can at: larin@centralschools.org

Let me know if you're using a computer, an iPad, an e-Pad, a Smart phone or what. It's important that we know! And how are you doing? Are you ok? Are you reading any good books, or maybe seeing some great movies? I'm doing a lot of painting of rooms these days and watching Netflix during the evening with my wife, certainly keeping myself busy. Looking forward to hearing from you!!

I was hoping that we would meet in class again. I guess that's not going to happen this year. Not even sure if we can get you some electrical devices to play with, but we will try. It's too bad, because things were just starting to get interesting! Unfortunately, things were also going to get considerably more challenging as you probably recognized from the last two homework. It would have been nice to be working hands-on at this point, but we'll all have to be patient. Continue to try to get yourselves familiar with all the stuff that I will be sending you through the lessons. It will be helpful in moving through all this more quickly next year when we meet again. We've got a lot to learn, and you've got a career to catch! So stay with it!!! Mr. Larivee

Ultrasonic Sensors: This week we are going to investigate the ultrasonic sensor. We will take a look at how it works and how to program it. Again, the programming part of this is not so important at this point, but try to get a feel for how it works, and we'll try to focus on it more a little later on.

This sensor works by sending a very high pitch sound, too high for the human ear to hear, bouncing it off an object to obtain a time, which we can then use to calculate the object's distance. Check out this easy to follow video on how the sensor that we will be using, the HC-SR04 ultrasonic sensors, works: <https://youtu.be/1jGvzNrtF24>



This next video is a little more comprehensive as it also shows you how it's connected and also how it's programmed. <https://youtu.be/ZeJQOX69K5M>

And if you really want to be accurate with the distance, which we're not all that concerned about, check out the physics and math of this video! At least check out the beginning of it. https://youtu.be/6F1B_N6LuKw

Homework: Why two eyes on the sensor? What does each do?

Homework: What does each of the 4 pins do? Or how do we connect them?

Homework: How fast is the speed of sound in a) miles per hour? b) in meters per seconds? c) in millimeters per seconds?

Homework: How does temperature affect the speed of sound?

Homework: What's the speed of sound at a temperature of 20 degrees Celcius and 40% humidity? b) at 40 degrees Celcius and 10% humidity? **Hint:** Last video, about 24 minutes into it, he talks about this.