Robotics I – Lesson (4-13-20)

Hope everyone is still healthy, and if you haven't emailed me yet, please do so at: larin@centralschools.org

Ok, we've looked at motors, gear motors, motor drivers, microcontrollers, and the ultrasonic sensor. Now it's time to focus a little on putting these together and writing the code needed to control them all. We need to learn how to program. It certainly looks a lot worse than it is. Once you get the hang of it, it's actually a lot of fun and it's amazing all the things you can do with it!

But how do I teach this from afar without lots of hands-on. Well, that I wasn't so sure????

However, amazingly, Tinkercad is the answer! Yes, the same program that we use to make crazy stuff on our 3-D printers is now including the construction of circuits. That's right, electrical circuits! Sounds nuts, but it's true.

Go to https://youtu.be/yyG0koj9nNY and get a quick overview of what I'm talking about. The video starts with showing you an actual Arduino microcontroller, but then she shows you a simulation of an Arduino microcontroller turning on an LED. She also shows you the coding for this. Again, don't panic, we'll take it slowly. Tinkercad is now simulating all kinds of circuits, including ones that uses microcontrollers! But the real nice thing is that you can't mess anything up, it's a simulation! LEDs turn on, motors run, and speakers make sounds, but you can't burn anything out. Nice!!! I played with it for a while and it's great!

Let's get started. Just like a lot of you did to work the 3-D printers, you first had to go to tinkercad.com and sign up. So go to https://www.tinkercad.com/circuits and click on: Circuits - Learn how to use Tinkercad | Tinkercad and then click on: Join Now in the upper right hand corner. Then click on: Create a Personal Account, and put in your email address and create a password that you will remember. If you did all this correctly, it should take you to the Tinkercad site. On the left side you should see your name, and under that, a column of choices. Choose Lessons. Your first lesson will be Start Simulating. Click on the first box and begin you lessons on building circuits with the Arduino Circuit Simulator! Play with it, change things around, try changing the color of wires or whatever, have fun with it. You can't burn anything out and you can always hit reset! Let me know how you do. That's your homework. Thanks, Mr. Larivee