Lesson # 2-3: Evaluate robot body designs and create algorithms to control robot behavior

jective:

- Evaluate how the design of a robot's body affects its behavior
- Create an algorithm to direct a human "robot" from one part of the room to another.

ivities:

- **Journal Entry:** Draw a robot or define what a robot is.

- **Have students to complete the following activity:**
  https://www.teachingenglish.org.uk/sites/teacheng/files/Robots%20student%20worksheet.pdf

- **We will complete activities #1 through #5 from this packet.** http://www.k-12robotics.org/uploads/5/6/3/3/5633548/pdf_introduction_to_robotics.pdf

- **Program a Friend** Can you build an obstacle course, then "program" a friend around the obstacles? Materials Needed: • Large room • Supplies to use as obstacles: pillows, chairs, etc. • Blindfold • Pencil/Pen • Paper To do and notice: 1. Clear a space of all items in a room. 2. Build a maze in the space with the items you have gathered. 3. Blindfold your friend. Using step-by-step instructions, guide your friend through the maze. Try not to hit any obstacles. You can make corrections as your friend moves. 4. Write down each step it would take for your friend to move through the maze. 5. Give your instructions to your friend, and have her navigate the maze again. Did she hit an obstacle? If so, change the instructions and try again. Keep repeating this process until she makes it all the way through the maze without hitting anything.

- **Hovercraft:** This project teaches kids how to make a simple hovercraft. After they complete the first design, see if they can change it slightly to make it even better! http://stem-works.com/subjects/1-robotics/activities/197

Additional Resources:

https://www.thebigbangfair.co.uk/media/49852/student_worksheets.pdf

Post recommendations to the forum

The challenge for this lesson is making sure I am able to get the two programs needed to program the finch robot to work in sink in my computers. The directions where hidden on the website and I had to rely heavily on my colleagues to help me figure out how to get it started. Also there was a button on the program that I had to make sure was green for all of my input to take affect and it took me about 30 minutes to figure that out.

I had to borrow a finch from another source to use in class. So I only had a select group to program the finch. The rest of the students use the online resources and resources that did not require a robot.

The resources that I included in my activities that did not require a robot were most helpful. I have included the links to the activities.

Put your name and contact info here, in case anyone has questions or wants to reach out to you.

Artifacts
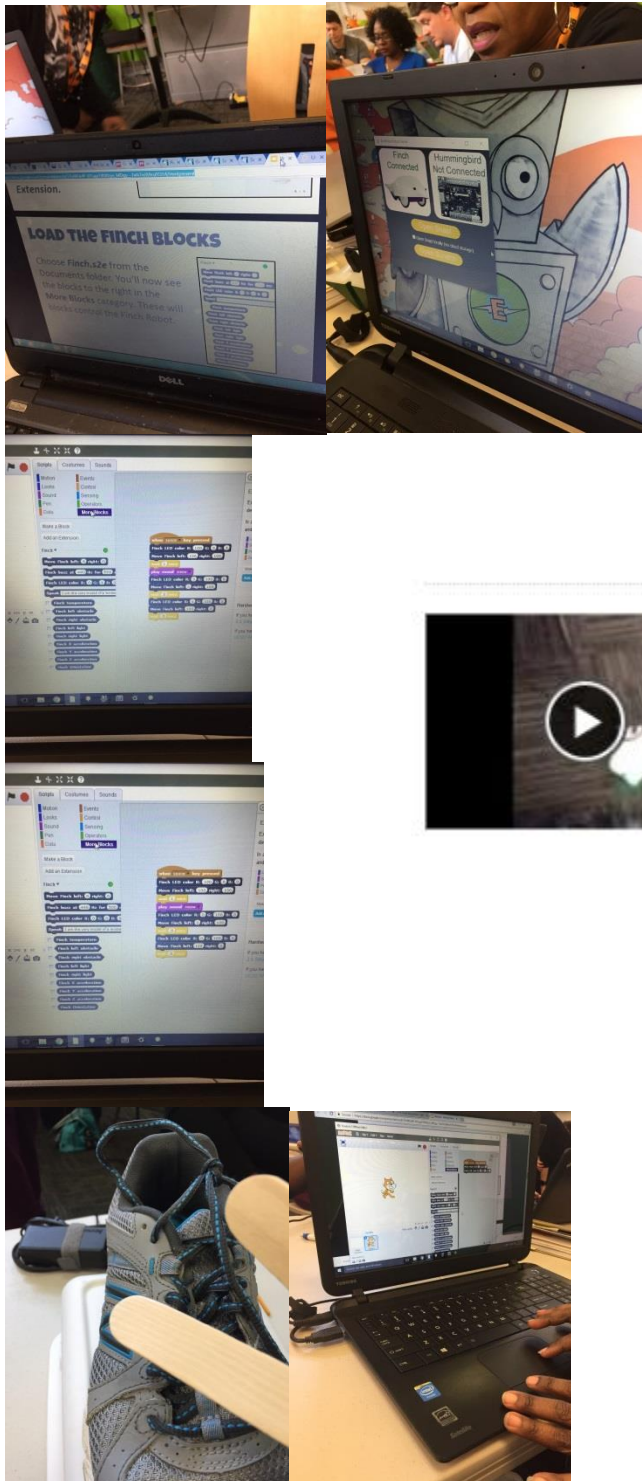
EXTENSION QUESTION:
If you could build the ultimate robot that would enhance your life; what features would that robot be capable of doing.

Draw a diagram of that robot.

Include what materials that robot would be made out of and why?

Put your name and contact info here, in case anyone has questions or wants to reach out to you.