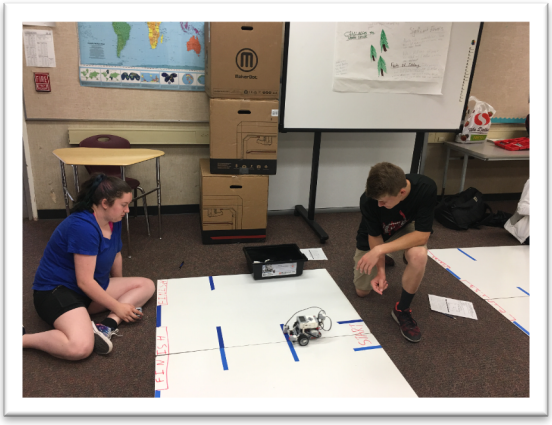
Challenge #1: "The Maze"

Hand Coding A Robot Using All Its Sensors. (60pts.)

(School Closure – Students Are Working At Home)

Goal: Students must Hand Code their Robots (Do not use your computer for this project) to successfully cross the board (being provided) through a maze using all the sensors being provided them.

Purpose: To test the student's coding abilities and knowledge of the sensors.



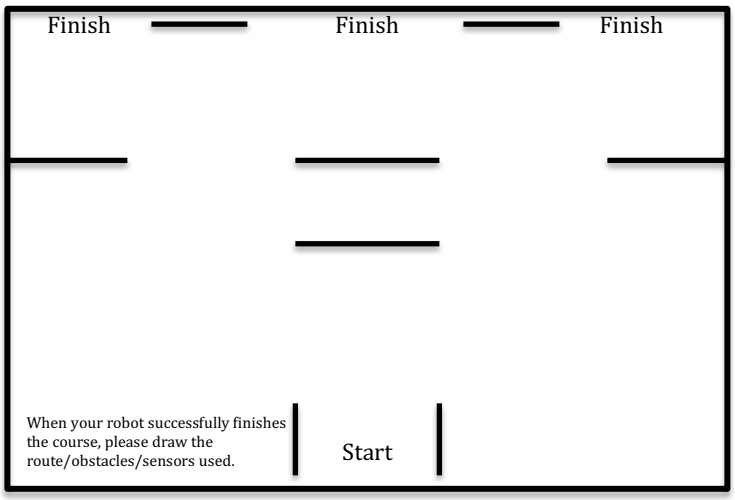
Watch the video of the robot working its way through The Maze!

The sensors that must be used:

1. **Color** (15 pts.)
   a. Hint: Use the Color Sensor for the first step when the robot moves forward to a colored line. Success is easily achieved if you use a dark color on a light background. Then have it turn right.
2. **Pressure Plate** (15 pts.)
   a. Hint: Use the Pressure Plate second so that when the robot moves forward and touches the black Lego container, it will stop and move backwards.
3. **Gyroscope** (15 pts.)
   a. Hint: After the robot backs up and stops,, have the Gyroscope turn the robot.
4. **Ultrasound** (15 pts.)
   a. Hint: The robot will drive forward, and you will place the colored cube in front of it which will trigger the Ultrasound sensor to have it stop and turn and proceed in another direction.

Note: The robot must approach a wall/block, sense the object with the ultrasound and react by slightly shifting course around the object. You may use your black bin as the wall/block.

Training: Please refer to the "Brick Programming Tutorials" provided in the previous lesson.



Film your robot successfully completing the maze using the sensors stated above.
Email it to:
jharrington@sthelenaunified.org