**AP CSP CodeBot**

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| **MISSION 6 Obj 1-3 Line Follower** | | **Time: 45 minutes** |
| **Project Goal:** Students will learn about Boolean lists.  **Learning Targets**   * I can use REPL to gather real-time data from sensors. | **Key Concepts**   * There is no “hidden magic” going on here! The ‘bot responds to programmed inputs and outputs. | |
| **Assessment Opportunities**   * Mission 6 Obj 1-3 Assignment * Quiz after Objective 2 * Submit the “CheckLines” program | **Success Criteria**   * Read data from a line sensor and display it on the Console Panel. | |
| **AP CSP Framework**  **DAT-2.D** Extract information from data using a program.  **AAP-2.E** Write expressions using relational operators and evaluate those expressions.  **AAP-2.K** Write iteration statements.  **Computational Practice 4.C** Identify and correct errors in algorithms and programs, including error discovery through testing. | **Materials**   * Mission 6 Obj 1-3 Assignment / Answers * Black line on white surface * Solution code for CheckLines\_obj3 | |
| **Teacher Notes**   * Students will follow the instructions and CodeTrek. * Objective 1: Students use the debugger to see the values of the list. When they open the console and enter the debugger, they need to click on “Debug” to see **detected** in “Locals”. The list will show up after the line of code that defines it has been executed.      * Objective 2: Students will use the console panel again, but this time they need to be in “Console”. They will type the code after the prompts. If you see this:   Press any key. Then you should see the prompt. Type the commands. It should look similar to this: Students can try other arguments for check\_lines, and other commands as well.   * The quiz brings up a problem with the code, that the values are inverted. The last question suggests a solution. Have students try the solution by changing the if statement in the function. Run the code. Then change the code back for Objective 3. * Students answer a question from the instructions and add a while loop to the code. | | |