

Challenge 4: Simple Line-follower Modifications

Here you are asked to predict the consequences of some simple modifications to *SciBorg's* `follow-line` program. Think carefully about your predictions and record them in your design blog. Later (maybe even the next day), test your predictions on an actual *SciBorg* and record your observations. Explain any discrepancies between a prediction and an observation.

a. Changing the Blackness Threshold. *SciBorg's* notion of what constitutes a black line is determined by a "blackness threshold". Predict what will happen if the blackness threshold in the program is set at the minimum value (0) and at the maximum value (1000). When testing your prediction, record the range of blackness thresholds in which *SciBorg* exhibits the "normal" line-following behavior.

b. Swapping Sensors Assume that the blackness threshold is reset to its initial setting. Predict what will happen to the `follow-line` behavior if you swap the connectors in sensor ports 1 and 2.

c. Swapping Motors. Assume that the blackness threshold and sensor ports are reset to their initial settings. Predict what will happen to the `follow-line` behavior if you swap the connectors in motor ports **a** and **b**.