Challenge 5: More SciBorg Behaviors

Below are specifications for the behavior of two new SciBorg programs. Working with your partner, implement (i.e., write PicoBlocks code for) and test these programs and include the code in your design blog. Include brief text to explain how your programs work.

1. follow-light: Using two light sensors placed at the front of your SciBorg, program SciBorg to “home in” on a bright light source placed about 10 feet away. Assume that your SciBorg starts off with a randomly chosen orientation with respect to the light. (Look at the sample SciBorg pictured below for guidance on how to mount the light sensors; it’s critical that they have “blinders” so that each light sensor can only look out at a relatively narrow range of angles.)

Hint: Base your light finding algorithm on testing the difference between the two light sensor values.

Extra (Optional) Challenges: 1) Have your SciBorg stop moving when there is insufficient light. 2) Use special infrared photodetectors to home in on a lit candle.
2. sobriety: SciBorg’s line following algorithm causes it to zig-zag back and forth a lot. Modify the line following behavior to reduce the number of zig-zags. That is, try to make SciBorg go as straight as possible when following a straight line segment. Does this change the behavior of SciBorg at a dead end (i.e., a line that just stops)? Also, try using feedback from the counters to drive straight.