Briana Davis, Molly Baker

Mrs. Chainani and Mrs. Malfa

STEM

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Robotics

In our project we programed our robot to complete a set course using a light sensor to follow the path. For the light sensor we had the threshold of light. Our threshold was 45. The threshold allows us to find the average of light, so that the robot would follow the darker line. During the test of our robot, our robot was able to complete the course in 21.56 seconds.

For the design of our project we first set four motor blocks made two of them connected to port B and two of them connected to port C. All four of the motor blocks are programed to move forward, that means all of the wheels are moving straight. One of the port B motor blocks power is set to 100 the other port B is set to a power of 30, and one of the port C motor blocks power is set to 100 and the other is set to a power of 30. Next we added a switch block and set it to light sensor, we then changed the port to port 4 and set the light to greater than (>) 45, because 45 is our threshold. We then added a loop block and set the loop to control for forever. This is the set up program than we have designed to create a robot to follow a complex course using light sensors.

We have made many decisions on the design we have created for the robot. One of the decisions we have made was that we set the power for two motors to be at 100 and we set the power for the other two motors at 30 was because it helped balanced the robot when it followed the track. In the process of finding these two numbers (100 and 30) we had to experiment with other numbers, the first number we chose were 100 and 20, we noticed that the 20 would make the robot move forward very slow. We then notched the number and changed it to 100 and 25, it moved the robot a little bit faster. Then we changed the 100 and 20 to 100 and 30, which put the robot at the perfect speed. Another also made the decision to make our robot to move forwards because when we set our robot to move backwards it didn’t cooperate very well. These are some of the major decisions we have made to create our program.

