GEAR/TCEA Robotics

Challenge 2: Driving School

Challenge 2.1: Basic Driving and Programming a Square Path

1. Program your robot to go straight for one rotation. How far did your robot move? Record that number below.

2. On the floor, find 2 parallel lines. Measure the distance between both lines and record that number below.

3. How many rotations are needed to make the robot move from one line on the floor to the other? Record that number below.

4. Program your robot to go forward the determined number of rotations and test it.

5. Did your robot move exactly from one line to the other? If not, what adjustments did you have to make to accomplish this task? Write down the actual number of rotations needed.

6. Create a program that makes the robot go forward from one line to the other and then come back to its starting point position.

7. How do you have to change your robot such that it travels a larger distance when using the same program as above?

Turning the Robot:

1. Create a program that makes the robot go straight for one rotation, turns, and then goes straight for another rotation. How many motor blocks are needed for this program?

2. In the turn motor block, move the slider all the way to the left. Which direction will the robot turn?

3. What do you think the differences will be when you move the slider just a little bit to the left?

4. Test your program. Was your prediction correct?

5. How many rotations are needed for the turn (slider all the way to the left) such that the robot turns in a right angle (90 degrees)?

6. Make your robot go around the square on the floor in clockwise direction.

7. How did you name your last program? Why? Do you think this is a good name?