

REC for Cortex

1.18 Activity: Arcade Control - Fundamental

Name: _____ Class/Period: _____ Date: _____

Overview:

In this fundamental activity, you will navigate a course with the BaseBot using one joystick Arcade control.

Duration:

30 Minutes

Materials:

Qty	Description
1	BaseBot
1	Playing field
1	Stopwatch
2	Two obstacles of your choice

Procedures:

1.18.1F: Configuring Arcade Control

- 1 Plug a jumper clip into port #12 on the I/O bank of the Vex controller.
- 2 Be sure your BaseBot is configured for Arcade control:
 - Left motor in motor port #1.
 - Right motor in motor port #10.



- 3 Turn on the joystick.
- 4 Turn on the robot controller.
- 5 Move the right joystick up and verify that the robot moves forward.

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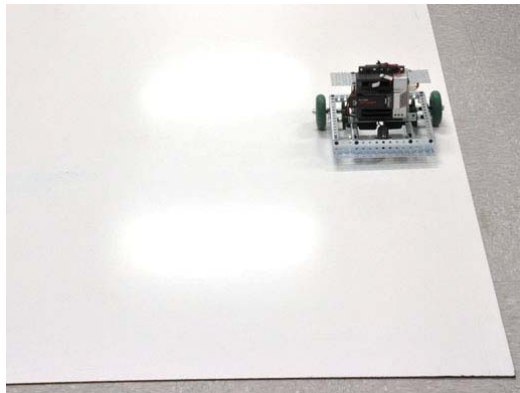
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- 6 Move the right joystick left and verify that the robot turns right.

If your robot does not behave as you expect, double-check your connections and settings.

1.18.2F: Driving the Robot in a Straight Line

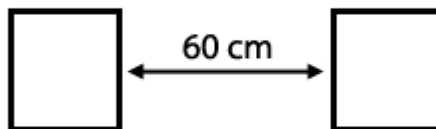
- 1 Move the right joystick up. The robot to drives forward.
 - Does your robot go straight?
- 2 Using the edge of the playing field as a reference, drive the robot in a straight line.



- Can you get your robot to move forwards and backwards in a straight line?
- How does the robot respond differently using arcade control compared to tank control?

1.18.3F: Mastering Arcade Control

- 1 Set up the same course that you used in activity 1.16. Try to use the same obstacles and have them roughly the same distance apart from each other.



- 2 Drive your robot clockwise around the obstacles like a racetrack using arcade control.
- 3 After a few laps, switch directions and go counterclockwise around the obstacles.
- 4 Drive the robot in a figure-8 pattern around the obstacles, while your partner times each lap around the course.

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- 5 Record the time in your engineering notebook. Use your time as a benchmark to track the improvement of your driving skills.
- 6 Take turns with your partner and make sure everyone in your group gets an opportunity to be timed.
 - Did your times improve or get worse after each run?

1.18.4F: Engineering Notebook

- In your engineering notebook, make a sketch of the course you navigated with your robot.
- Note your progress after each of your timed figure-8 laps using arcade control.

Questions:

Write the answers to the following questions on your question sheet. Add the completed question sheet to your robotics binder.

- | | |
|-------------------|--|
| Question 1 | How did your arcade control times compare with your tank control times? |
| Question 2 | Which did you prefer and why? |
| Question 3 | After some practice driving arcade style, did your time improve or get worse? Why? |
| Question 4 | What was the hardest maneuver for you to make with the BaseBot driving arcade style? |
| Question 5 | Which maneuvers were easier with tank control? |
| Question 6 | Which maneuvers were easier with arcade control? |