

Introduction to Programming LEGO® MINDSTORM® EV3

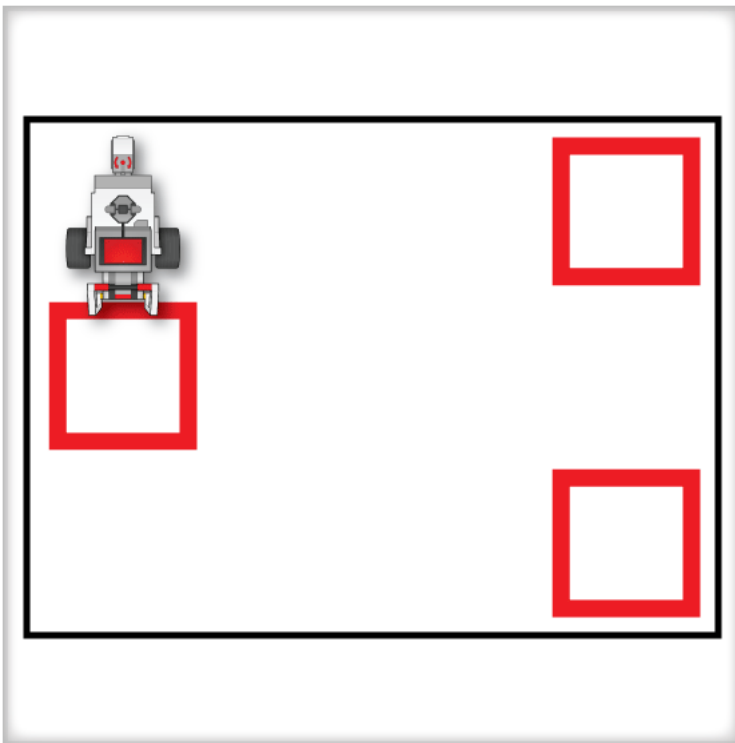


CHAPTER CHALLENGE

CHAPTER 5: Mower Challenge

In this challenge, you will program your EV3 robot to erase or clear the entire gameboard of either markings or parts. The robot is able to move freely in straight lines, using any method you want. However, there are three mud zones marked on the game board. When turning in one of these areas, the robot must be picked up by hand, and placed back down.

Rules and Procedures:



- The robot must clear the board of marks or parts to complete its mission.
- If any part of the robot is in the mud zone (red squares) at any point during a turn, it must be picked up and placed back down, as close to the same spot and facing as possible.
- Use overlapping paths to compensate for sensor inaccuracies

Hints:

- Because the robot's wheels continue to spin in the air when it is picked up, Rotations or Time will not be reliable for turns in the mud.
- The Gyro Sensor responds only to the robot's body turning, and is unaffected by interruptions like being picked up.
- It is unlikely that the eraser (or scoop) will perform perfectly, especially near the edges of its reach. Plan your robot's course accordingly.
- Use an adjustment factor to compensate for the fact that the robot won't see 90 degrees until it is past 90