Introduction to Programming

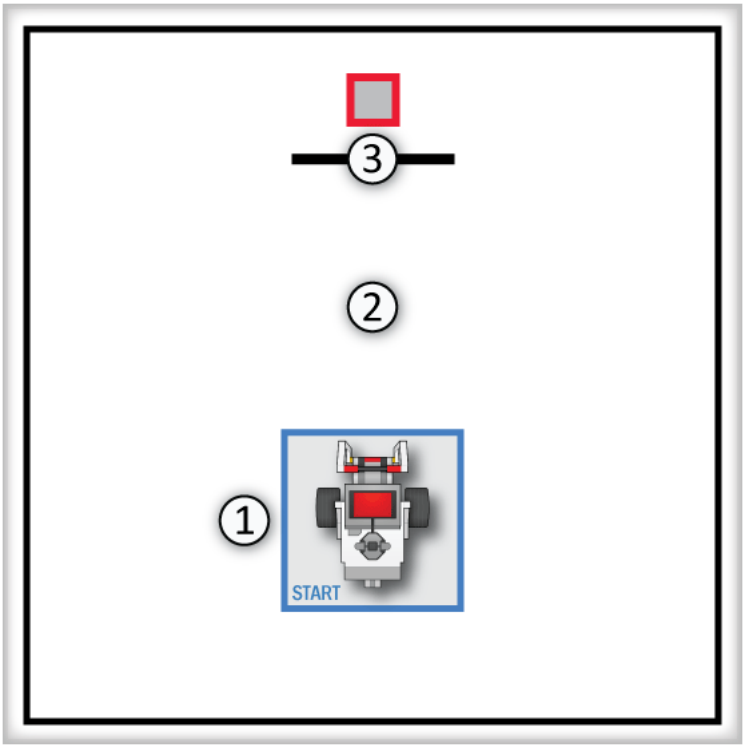
LEGO® MINDSTORM® EV3

CHAPTER CHALLENGE

CHAPTER 3: Arm Position Challenge

In this challenge, you will program the robot's arm to move into the "Up" position when the "Up" button on the EV3 is pressed, no matter where the arm started. The robot will then move forward five (5) rotations to pick up a cargo container, and bring it back to the starting location.

Rules and Procedures:



- The robot's arm will be moved to a random position before running.
- You must use parts available to you to modify the Touch Sensor's mounting so that it can detect when the EV3RE's arm is in the "up" position.
- Try to do this with as few changes as possible.
- When the "Up" button on the front the EV3 is pressed, the robot must raise its arm to the "Up" position (1), move forward two rotations to the cargo (2), and bring it back to the original starting position (3).

Hints:

- The trigger area on the Touch Sensor is small. You will probably need to build a "bumper" or "extender" on the end of th Touch Sensor to make it detect the arm more reliably.
- The EV3 core set includes two Touch Sensors. You can use one sensor for detecting the arm in the "Up" position, and the other to detect the box.
- You can also make a test run, then calculate "how many times as far" you need to move or turn to get the amount of movement you want, compared to a test run.