



ROBOTICS CHALLENGE

Challenge Description

“The Intermediate Challenge”

Design a robot that completes each of the intermediate level programming elements you would need for the more difficult challenges of the class. Teams who learn these elements will reuse them in other challenges in the collection. *This challenge was especially designed for those who have completed the Beginner’s Challenge and want to continue perfecting skills.*

Specifications

- *Each challenge* must be completed separately and judged separately before the team moves on to the next in the list. Print out this form for the judge to check off tasks as you accomplish them. When all tasks are completed, the team earns the points.
1. [] Robot goes forward toward a wall. On a **gentle** impact, the robot backs up and repeats the task. When 30 seconds have passed, the robot makes a noise of frustration, and stops. *Hint: use a timer fork.*
 2. [] Robot goes forward toward a wall. On a **gentle** impact, the robot backs up and repeats the task. Once the robot has tried 5 times, the robot makes a noise of frustration, and stops. *Hint: use a container fork.*
 3. [] Robot goes forward to a line and stops. It decides **randomly** whether to turn around and go back or to go forward. *Hint: use a random fork.*
 4. [] Robot goes forward toward a wall. On a **gentle** impact, the robot backs up and decides randomly (*use random fork*) whether to go forward again or to turn slightly before advancing. The robot counts how many times it turns (*use a container*). When the robot has made an effort to turn 4 times (*use the value of container*), it makes a noise of frustration in protest and stops.
 5. [] Construct a claw or pincers that close when a touch sensor is activated inside (so that it grabs onto something when it can).
- Robots must be made with LEGO Mindstorms Robotics Invention System and be programmed with Robolab programming environments.
 - Robots can consist of a maximum 1 RCX, 8 Wires, and 3 motors.
 - Nothing can be added or removed from the robot during a round.
 - No non-lego parts are allowed
 - Challenge is maximum 2 minutes long
 - Challenge starts at the designated start area

Scoring

200 point challenge upon successful completion of all tasks.

Robots sustaining any damage must try again for any credit.