

Game On Follow the Line

"SDF Race to the Fun"

Robot Specifications

Robots must be autonomous. Robot must follow line from beginning to end.

When a verbal command is given, the contestant will start his/her robot. Robots will have a delay of no more than 5 seconds after the start button is pushed. The timer will be stopped at the **finish line** when the robot crosses the **finish line**.

Materials will consist of snap together pieces, such as LEGOs, K'nex, Tetrix, Vex, or other materials. Questions should be sent to studentshowcase@sdfair.com. No limit on motors or sensors.

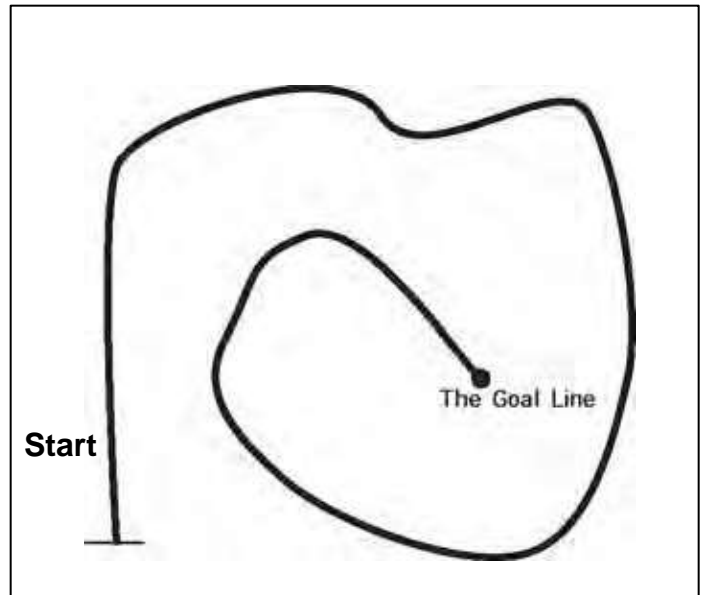
The maximum robot width is 8.5 inches (216 mm). The maximum robot length is 11 inches (279 mm). (That's a standard sheet of paper 8 1/2" by 11").

There are no constraints on robot height.
There are no constraints on robot weight.

Teams are limited to five students. No more than eight teams for this competition. First come basis.

Track Specifications

The track surface is white Melamine. The overall size of the track surface is 4' x 4'. It will have no vertical sides. 1/8 inch (3mm). The course line is 0-3/4 inch (19 mm) wide black tape. The course line may have discontinuities, not to exceed 1/8 inch (3mm). The course line may be curved. The line will be at least 6 inches away from the edge of the board. The robot must deal with the lighting conditions as they appear. Flash photography and IR focusing cameras will be allowed, unless the judges deem such activities as interfering with the ability to hold the event in general.



Game On Follow the Line Board

4' x 4'

Scoring

The official score for a robot occurs when it crosses the finish line after reaching the Goal Line. Nudging, pushing or restoring a robot to the location where it left the track incurs a five second penalty for each occurrence, including the time taken to place the robot. A robot that takes a shortcut will be picked up and placed on the correct path, also incurring the time penalty. If the robot does not complete the course on the first attempt, it will be allowed another attempt. If unsuccessful again, it will be given a final (third) attempt.

There will be three timed runs. The robot with the lowest combined time for the three runs will win. There will be awards for second and third.

Basic line-following track was laid out as pictured above. There may be a slight variation as the line for the course may be rearranged for this contest.

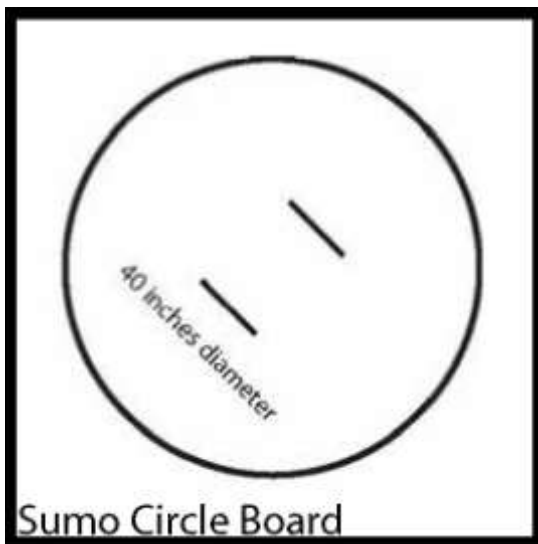
Sumo Circle

Dohyo

Build the world's strongest robot! Use your design expertise to see how your robot can overpower your opponent. Face off with your opponent in the Sumo Circle. Objective: push your opponent to the outside line or lose mobility.

Rules

1. Two minutes will be allowed for setup and calibration before each round.
2. The robot must fit within 8.5" x 8.5" area
3. The maximum number of motors is two. Autonomous robots only - No remote control.
4. Robot weight is not to exceed two (2) pounds.
5. The robot must start behind one of the two central lines.
6. The team operator is only allowed to place the robot on the board and to push its starting button when told to do so.
7. The robot must beep when the button is pushed and start no sooner than 5 seconds after the button is pushed. (to allow the operator to remove his/her hand and step back).
8. The format of the competition will be double elimination.
9. During the round the first robot to touch the outer line or lose the ability to move loses the round. A round will be 2 minutes. In the event both the robots are still on the board robot with their power button farthest from an outer line wins. (a reflectance sensor may cross the vertical plane of the black tape, but not go beyond the black tape)
10. Teams are limited to five students. No more than eight teams for this competition. First come basis.



48" x 48" no rails on the edge

The Dohyo surface will be white in color. The line will be .75 of an inch in flat black paint. Lines in the Dahyo will be light yellow paint. The board will be 48" x 48" and elevated 3" from the ground.

Awards will be given for;

1st place, 2nd place & 3rd place