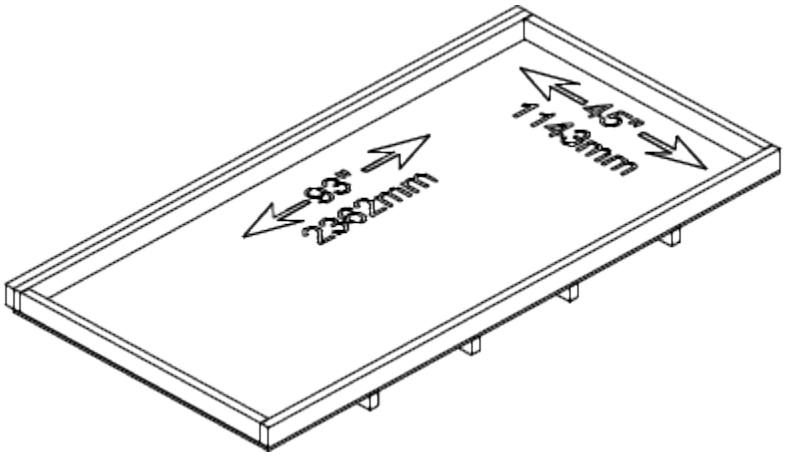
Follow the Line

Last updated July 12, 2019

Overview

Robots must follow a line from start to finish, navigating the course on their own, without being controlled or guided by a human operator. The robot that reaches the end of the course in the fastest time is the winner.

Playing Field



The competition will take place on a standard-size FIRST LEGO League table, a 4 feet by 8 feet smooth white surface surrounded by two-by-four walls painted flat black. (The actual playable area is 93 inches by 45 inches.)

A large sheet of white paper will be laid down on the table to create the line-following route. The line will be marked out using black electrical tape, ¾ inch wide. The length and shape of the course will not be known until the contest begins. Competitors should expect straight sections as well as curves to the left and right. However there will be no gaps in the line, or ninety-degree turns, or places where one line intersects or crosses over another.

There will be at least one foot of clearance between the line and the wall at all times.

Competition

Each robot will compete individually and will have two attempts to navigate the course in the fastest possible time. The tournament judge will signal the contestant to activate his robot. After activation, no further human interaction with the robot is permitted until the conclusion of the attempt. A robot need not stop automatically at the end of the course.

Robot Design

Robots are limited to a maximum of two sensors for detecting the line. They may use light sensor(s) or color sensor(s) or third-party sensor(s). They may use additional sensors for other purposes if necessary. They may use any number of motors.
There is no length, width, height, or weight restriction on robot construction. However,

builders should keep in mind the one foot clearance rule (see the Playing Field section).

Robots must be constructed of 100% LEGO-brand parts, with special exceptions allowed for string, rubber bands, batteries, and third-party sensors. No modification (melting, glue, deformation, etc.) of the bricks is permitted. Contestants may use any type of intelligent brick (RCX, NXT, EV3, Cybermaster, Scout, etc.) and any number of sensors and motors, subject to the two-sensor maximum for line detection.