



# Hit the Brick

## Official 2012 Rules and Participant Guidelines

**Level:** Intermediate/Advanced

**Number of robots:** 1

**Robot Weight:** 3.3lbs (1.5kg) or less

**Robot Dimensions:** maximum 12" x 12". Height cannot exceed 12"

**Robot Control:** Autonomous

**Number of robots competing per round:** One

**Number of motors:** Maximum of Two

**Number of light sensors:** Maximum of Two

**Number of robots competing per round:** One

**Time Limit:** 3 minute maximum

**Controllers:** One

**Competition:** Robot completing the task in the shortest time wins.

### Summary:

Competitors seek to design robots that will recognize and follow a black line from start to finish in the shortest amount of time.

### Event Rules

The objective is to follow the track from start to end in the shortest amount of time. Once activated, the robot must operate without any human guidance.

The robot begins with their light sensors extending 1 inch over the line. Timing begins when the official says, "Go!" A robot must traverse each of the segments in order, and completely stop when it reaches the end of the course where a common masonry brick is situated. Robots must recognize the end of the course, (signaled by the brick) shut off their motor(s) and come to a complete stop. Timing stops when the robot comes to a complete stop.

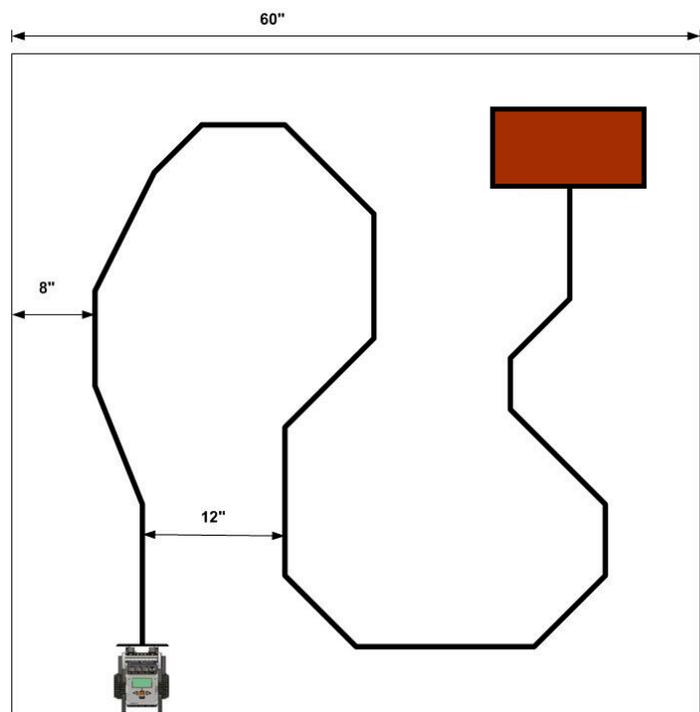
Nothing can be added or removed from the robot during a round. The robot must stay in the 5' x 5' area. If at any time the robot leaves the 5' x 5' area it is disqualified.

**Playing field:** The playing field is a 5' x 5' white surface that has been constructed with white posterboard joined to form a 5' x 5' area.

$\frac{3}{4}$ " black electrical tape marks a track leading from the start to end locations. A common masonry brick ( $3 \frac{5}{8}$ " x  $2 \frac{1}{4}$ " x 8") is set at the end of the course.

The course will not be exactly as shown here. The track will consist of connected straight segments. No part of the track will be within 8" of the area edge or within 12" of other portions of the track. No angle between adjacent segments will be less than 135 degrees (i.e. the turns will at most be 45 degrees) and no segment will be shorter than 4 inches. (Expect some overlap of the tape between segments.)

Contestants will be given an opportunity to calibrate their robots to the brightness of the arena surface.



**Scoring:** The base score is the time from when the robot is started until it "hits the brick." A penalty of 7 seconds is added to the base time if a robot does not shut off its motor(s) when it reaches the brick. The robot with the fastest time wins.