RobotChallenge - Robot Bowling Rules

Note: All rules are subject to change without notice.
Name of Event: Robot Bowling
Group:Junior and senior

1. Robot Bowling - Junior Rule

1.1 General Requirements

1.1.1   Field Dimensions
A. The alley is 48" long x 16" wide.
B. The robot area is 12" long at one end of the alley.
C. 10 LEGO pins are arranged in a triangle about 8" from the far end of the alley.
D. There are walls surrounding the alley made of 1" x 4" boards (slightly decreasing the alley area).
E. The surface is smooth hardboard.
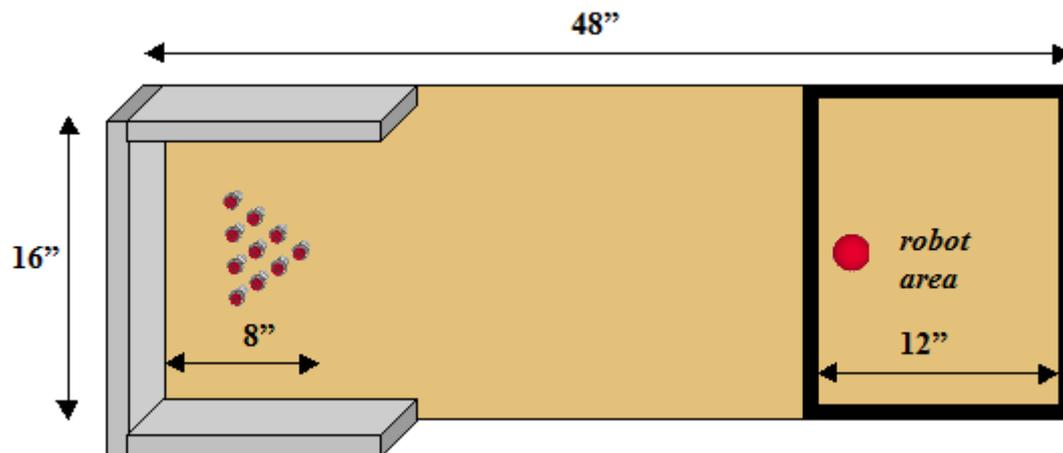
1.2. Requirements for Robots

1.2.1. General Robot Specifications
A. Robot Dimensions: 12"l x 12"w x 12"h.
B. There is no restriction on robot equipment.

1.2.2. Class Specifications
A. The robot must be remote control..
B. The ball is a standard 2" LEGO Duplo ball as found in the MindStorms robot set.
C. The 10 pins are constructed from LEGO parts and arranged as shown the the diagrams below.
D. The pins are constructed from a 6 long technic axle, a LEGO pulley, and two 2x2 round bricks as shown below. They are arranged with a front-back spacing of 4 LEGO units and a sideways spacing of 6 LEGO units as shown below (but

they will NOT be placed on a LEGO base plate).

1.3. Game

1.3.1. Aim of the Game
A. The robot can be loaded with the ball and aimed manually, but once activated, the robot must be remote control that send the ball toward the pins.

1.3.2. Start of the Game
B. The robot and ball must start completely within the 12" x 16" starting area. The robot must not leave the starting area. Robots may start in the upper or lower corners of the starting area. The referee whistled, players control robot competition.

1.4. Scoring

A. Scoring is the same as regular ten-pin bowling, except only 5 frames will be played. In each frame, the robot has two chances to knock down as many pins as possible with the ball. One point is awarded for each pin knocked down. If all ten pins are knocked down with the first ball, a strike is awarded and the next two balls will count double. Or if all 10 pins are knocked down with two balls, a spare is awarded and the next one ball will count double. If all 10 pins are knocked down in the final frame, three balls are allowed in that frame.

2. Robot Bowling - Senior Rule

2.1 General Requirements

2.1.1 Field Dimensions
A. The alley is more than   48" long x 16" wide, it is a unknown task.
B. The robot area is 12" long at one end of the alley.
C. 10 LEGO pins are arranged in a triangle about 8" from the far end of the alley.
D. There are walls surrounding the alley made of 1" x 4" boards (slightly decreasing the alley area).
E. The surface is smooth hardboard.
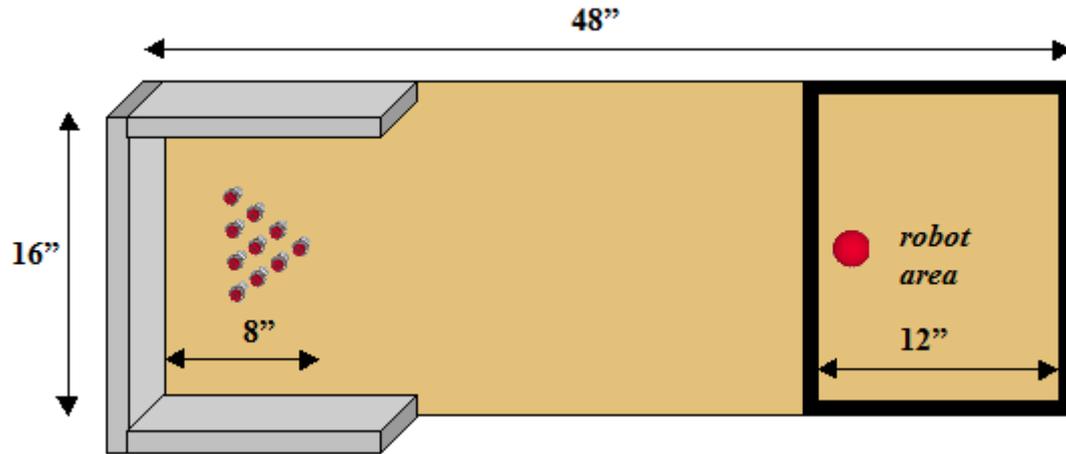
2.2. Requirements for Robots

2.2.1. General Robot Specifications
A. Robot Dimensions: 12"l x 12"w x 12"h.
B. There is no restriction on robot equipment.

2.2.2. Class Specifications
A. The robot must automatic.
B. The ball is a standard 2" LEGO Duplo ball as found in the MindStorms robot set.
C. The 10 pins are constructed from LEGO parts and arranged as shown the the diagrams below.
D. The pins are constructed from a 6 long technic axle, a LEGO pulley, and two 2x2 round bricks as shown below. They are arranged with a front-back spacing of 4 LEGO units and a sideways spacing of 6 LEGO units as shown below (but they will NOT be placed on a LEGO base plate).

2.3. Game

2.3.1. Aim of the Game
A. The robot can be loaded with the ball and aimed manually, but once activated, the robot must be send the ball toward the pins.

2.3.2. Start of the Game
B. Robots have 30 minutes to prepare for unknown tasks.
C.The robot and ball must start completely within the unkwon size starting area. The robot must not leave the starting area. Robots may start in the upper or lower corners of the starting area. The referee whistled, robot begin competition.

2.4. Scoring

A. Scoring is the same as regular ten-pin bowling, except only 5 frames will be played. In each frame, the robot has two chances to knock down as many pins as possible with the ball. One point is awarded for each pin knocked down. If all ten pins are knocked down with the first ball, a strike is awarded and the next two balls will count double. Or if all 10 pins are knocked down with two balls, a spare is awarded and the next one ball will count double. If all 10 pins are knocked down in the final frame, three balls are allowed in that frame.

3. Declaring Objections

3.1. Declaring Objections
A. No objections shall be declared against the judges' decisions.
B. The lead person of a team can present objections to the Committee, before the match is over, if there are any doubts in the exercising of these rules. If there are no Committee members present, the objection can be presented to the judge before the match is over.

4. Flexibility of Rules

As long as the concept and fundamentals of the rules are observed, these rules shall be flexible enough to encompass the changes in the number of players and of the contents of matches. Modifications or abolition of the rules can be made by the local event organizers as long as they are published prior to the event, and are consistently maintained throughout the event.

5. Liability

A. Participating teams are always responsible for the safety of their robots and are liable for any accidents caused by their team members or their robots.
B. The RobotChallenge organization and the organizing team members will never be held responsible nor liable for any incidents and / or accidents caused by participating teams or their equipment.