



GOING GREEN 2009 ROBOTICS COMPETITION ARENA CHALLENGE RULES & REGULATIONS

General Competition Information:

- There will be one arena division; this means that either kit may be used
- The arena used at the competition is 4' x 4' and does have sides (the printed mat is 3.5' x 4')
- A student may be on only one team
- Each school which has an arena entry will receive one course mat, 2 coke cans, 1 bundle of papers, and 3 trees to practice with prior to the competition
- The robot brought to the contest must be built and programmed entirely by the student team members
- Electronics from any ONE LEGO RCX or NXT Kit may be used to construct the robot with the following stipulations:
 - The following NXT Electrical components may be used:
 - 3 Touch Sensors Max
 - 2 Light Sensors Max
 - 3 Motors Max (must be NXT motors)
 - The following RCX sensors may be used:
 - 3 Touch Sensors Max (any model of LEGO RCX touch sensors may be used)
 - 2 Light Sensors Max
 - 3 Rotations Sensors Max
 - 3 Motors Max (must be RCX motors)
 - No other third party or homemade sensors may be used
 - Adapter cables found in the NXT Educational Kits may **NOT** be used, unless they are being used in a non-electrical manner
 - Any amount of LEGO Wire or LEGO Cables may be used
- An unlimited amount of LEGO pieces and elements are allowed that can be taken from the RCX based Team Challenge Set or NXT Education Resource Set, but note that the robot will need to fit in the starting home square (12" x 12")
 - A LEGO piece or element is defined as beam, plate, brick, friction, pen, pushing, etc. **not** a sensor, motor, or other electrical devices

- Teams may improve functionality, decorate, or accessorize their robot with Lego or foreign items, such as cardboard, Popsicle sticks, rubber bands, playing cards, ect. totaling \$5.00 or less.
 - Extra items may not be used to enhance the structural stability of your robot, only functionality or aesthetics
 - Extra items (such as tape, string, etc.) cannot be used to reinforce the Lego structure, they may **ONLY** be used to attach other objects
 - Glue is **NOT** allowed under any circumstances
 - All extra items must be itemized into a Bill of Materials, assigned an appropriate retail value, and approved and signed by the team sponsor
 - Bill of Materials form available on-line
 - Bill of Materials (if needed) **MUST** be submitted to the judge at the start of each round
- Teams will be called to the arena when it is time for them to compete. If the team is not present by the end of the second call, they will forfeit the round.
- The team captain will place the robot in the home square. After starting the robot, the team captain **MUST** be seated. All other team members **MUST** be seated in the designated team area.
- Downloading is only allowed in the Practice Area. It is recommended to cover the RCX receiver with electrical tape after downloading your program.
- Bluetooth will be required to be disabled on all NXT robots when competing

Arena Adventure Rules:

1. The robot's starting dimensions must fit completely inside the 12" x 12" home square.
2. The robot must be entirely inside the home square when the run button is pushed.
3. Robots must leave the "Home" area and perform tasks with only their programming to control them. Remote control units are not allowed.
4. If a robot does not move after the run button is activated, the captain of the team may start their robot again.
5. If a team member touches the robot while it is **COMPLETELY** outside of the start area before the 2 minute time is up, it will be disqualified from the entire competition, **HOWEVER**, if the robot has completed the course and has reached home, it may be turned off but not removed from the arena.
6. The robot **MUST** attempt at least one task other than going Home to receive any points.
7. For points to be awarded for the recycle path, the robot must use a light sensor, exhibit line reading behavior, and complete the entire path.
8. In order to receive points for Home, some part of the robot must be on the home square and stop.

9. The score is determined at the end of the 2 minute round (or when the captain states the run complete) by the condition of the field at that time only. This means that if a robot moves an object into a scoring zone and then subsequently moves it out before the round is completed, the team will not receive points for that item.
10. Each team will run the course twice. All entries will run in a pre drawn order. At the end of the first round, all teams will run a second time in the same order as round one.
11. The winner will be the team with the highest score from either round. If there is a tie, time will be used as the tie breaker.
12. The judges make ALL final judgment calls and will not consider protests.

