Rules for the Robot Hunger Games
I. Purposes

1. Gain an interest in science, technology, engineering, and innovation, in a team environment.

2. Learn through trial and error and experimentation with only a little adult coaching.

3. What we learn is more important than winning.

4. Have fun while pushing yourself and your team to do better.

II. Sportsmanship

1. You are competing against hard engineering, programming, and strategy challenges, while treating PEOPLE and robots with respect and kindness - from your own team as well from other teams.

2. Try building upon other people's ideas instead of resisting or defeating them.

III. Judge's Decisions

1. The competition requires judgments that may affect the outcome of a match.

2. You may try to persuade the judge of a decision while it is being considered.

3. However, all decisions of the judge are final. There is no appeal process after scoring for a match is complete.

4. In circumstances not specifically covered by these rules, the judge may make decisions to preserve the integrity of the competition and the spirit of fair play.

IV. Field

1. The field is where the robot game takes place. It consists of a field mat, on a table, with models arranged on top.

2. The field does NOT include the Base

3. Intentionally damaging objects in the field is not allowed.

V. Base

1. Base is an imaginary box formed by vertical walls that rise from the perimeter of the Base area, including the inside surface of the border walls

2. This means Base is not just an area on the mat – it's a volume.

3. Usually there is a slight gap between the mat and a side border wall… Base includes this gap.

4. The robot is "in base" if any part of the robot penetrates this volume.

VI. Matches

1. A match will consist of two rounds.

2. The Bonus Round will take place first, and shall be 1 minute long. The robot must be programmed to drive autonomously (without human control) when it leaves the base.

3. The Joystick Round will take place second and shall be 3 minutes long. The robot will be driven under human control using a joystick. The field will be reset between the Bonus and Joystick Rounds.

4. The timer does not stop during a round for any reason.

5. The points scored in each round shall be added together for the total match score.

6. In the event of a tie, a 1 minute joystick round shall determine the winner.

VII. Cargo, Strategic Objects

1. Cargo is anything the robot is carrying for transport, excluding the passenger. Items merely being pushed in the field by the robot are NOT considered cargo.

2. You may construct **"strategic objects"** that are not permanently attached to your robot. Strategic objects are tools your robot uses during a match. They can interact with objects, contain objects, help your robot to score, or prevent your opponent from scoring. Such objects are treated like any cargo in these rules.

3. Strategic objects may not be placed in the field by hand. They must start in base and be moved by the robot.

4. Scoring items may NOT be permanently attached to a "strategic object".

VIII. Handling the Robot

1. Before the match, and while in Base, you may handle and prepare the robot by hand.

2. Typical robot handling and preparation includes repairs, switching attachments, selecting programs, resetting features, loading/unloading cargo, positioning strategic objects, and aiming.

3. While handling the robot, be sure not to disturb the field in any way.

4. Objects brought into Base are yours to store, prepare, or place for interaction with the robot.

5. If the robot is in base, any cargo the robot is transporting is also considered in base.

IX. Handling Not Allowed

1. The only things you may do by hand in the field are:
   ● Stop and lift the robot, any time. Consequences: See **XI. Touch Penalty**
   ● Recover robot parts from accidental damage, as needed. See **XII. Robot Damage and Touch Penalties**

2. You may not move or adjust anything in the field, during or after the match. Only the robot may move or adjust items that are located in the field. Human action, including throwing items from base, may **NOT** make any changes to the field.

3. In the case of non-robot accidents: If your elbow, hip, clothing, or even the judge messes something up, this gets "undone" as fast and accurately as possible, if possible. Changes to the field caused by the removal of your inactive robot from the field are treated the same way.

X. Round Start and Restarts

1. For the round start and all restarts, every part of the robot that supports its weight (wheels, skids, etc) must be located within base. Other parts of the robot can extend outside of base.

2. However, the robot may NOT touch any object located in the field. Cargo loaded onto the robot by hand may also be located outside of base on the robot, however, cargo may NOT touch the field.

3. Robot may NOT touch objects in the field that the robot is about to move or use.

4. For the round start, the judge will confirm both teams are ready, If your robot is not ready for any reason, such as having an insufficient charge, the team should NOT indicate that it is ready. The judge will then count down, "3, 2, 1, Go!"

5. After "Go!", the robot may leave base or touch objects in the field.

XI. Touch Penalty

1. If you touch an active robot in the field, your robot must be stopped immediately and returned to base.

2. For each touch, you lose one barrel, if any are available at the time. The judge will remove the barrel closest to the center barrier wall.

3. Any cargo your robot is transporting will be dropped in place. Objects staying on the field after any touch should be lowered to rest as close as possible to the place and orientation they were at the time of the touch. (Note: the passenger is NOT considered cargo)

4. If the only part of the robot crossing into Base at the time of the touch is a cord, hose, wire, tube, chain, string, or other feature obviously used primarily for extension, the robot is treated as if it were outside Base.

XII. Robot Damage and Touch Penalties

1. If your robot is in Base, you may recover any missing pieces of your Robot from the field WITHOUT a touch penalty.

2. If you touch any missing pieces of a robot while the robot is in the field, that is considered a touch on your robot and all touch penalty rules apply.

XIII. Robot Actions Stand

1. Anything done to your field by the active ROBOT outside Base STAYS that way,

unless the active ROBOT changes it.

2. Objects outside Base are not repaired, reset, recovered, or moved out of the way by hand. This means the robot can ruin its own opportunity to accomplish tasks, and it can even undo previous progress/results.

3. If your active robot loses contact with cargo, the cargo stays where it comes to rest unless/until the active robot regains contact with it. It may not be recovered by hand.

4. Any scoring item that comes off the competition table is kept by the judge and is not eligible for scoring.

XIV. When Time is Up

1. Stop the robot immediately and leave it on the field. Don't touch anything!

2. The judge needs time to record the condition of the field, and come to agreement with you about what points were scored or missed and why.

3. Check that you agree with the score before you take your robot and leave the table.

4. Please remove the passenger and leave it for the next team.

XV. Robot construction

1. Your robot must be completely constructed with LEGO parts, with one exception.

2. The exception is that you may use **one** non-LEGO rubber band on your robot.

3. You may use your own LEGO parts on your robot.

4. The judge reserves the right to ban certain parts if they give an unfair advantage. (For example, the EV3 motors or "brick")

XVI. Scoring

All scoring is based on conditions at the moment the round ends. Scoring that is undone before the round ends does not count. With the exception of handling items in base, all scoring must be caused by the robot, not the human competitor.

Passenger (20 pts x1) Robot must carry passenger for the entire round. No part can penetrate an opening in the passenger, nor can passenger be restrained by a rubber band. It is the team's responsibility to find a passenger if not left on the game table prior to the match.

Barrels (10 pts each x8) Any barrel standing upright in your field or your base. If the barrel comes apart, only the base will be scored.

Ping Pong Balls (15 pts each x8) Any ping pong ball on your opponent's side of the wall.

Bumpers (15 pts each x2) Bumper knocked off pedestal. Top wheel must touch the uppermost cross piece.

Blocks (20 pts each x6) Any part of your team's blocks on your opponent's side of the wall. Area under the wall is neutral. Your team's blocks are color coded.

Arrow (50 pts x1) Yellow arrow pointing toward your side of table. Must be turned at least 30° past parallel with the center wall.

Loops In Box (60 pts each x5) Loop is inside your box. Any part of Loop must penetrate volume contained by the box.

*Note: The **Goal Area** is an imaginary box formed by vertical walls that rise from the perimeter of the Goal Area. It's not just an area on the mat – it's a VOLUME. An item is "in goal" if any part of the object penetrates this volume.*

Loops Upright in Goal (40 pts each x5) Loop is upright in your goal area.

Loops Down in Goal (20 pts each x5) Loop is horizontal in your goal area.

Gears Over Wall (30 pts each x3) Your team's gear is on your opponent's side of the wall. Your team's gears are color-coded.

Gears Upright in Goal (20 pts each x3) Your team's gear is upright in your goal area.

Gears Down in Goal (40 pts each x3) Your team's gear is horizontal in your goal area.

[Moran STEP Robotics Website](#)

(Game information, pictures, and video from the Robot Hunger Games)

These rules are adapted from the rules developed by the First Lego League for its Robot Game:

"2013 NATURE'S FURY Challenge." *FIRST LEGO League*. Web. 26 Mar. 2014.

      <http://www.firstlegoleague.org/challenge/2013naturesfury>.