



Recycle Rescue The Game

Table of Contents

Section 2 – The Game.....	2
2.1 – Overview.....	2-3
2.2 – Game Description and Field Drawings.....	3
2.3 – Game Definitions.....	4
2.4 – Game Rules.....	5
2.4.1 – Scoring.....	5
2.4.2 – Safety Rules.....	5
2.4.3 – General Game Rules.....	6
2.4.4 – Recycle Rescue Specific Game Rules.....	6

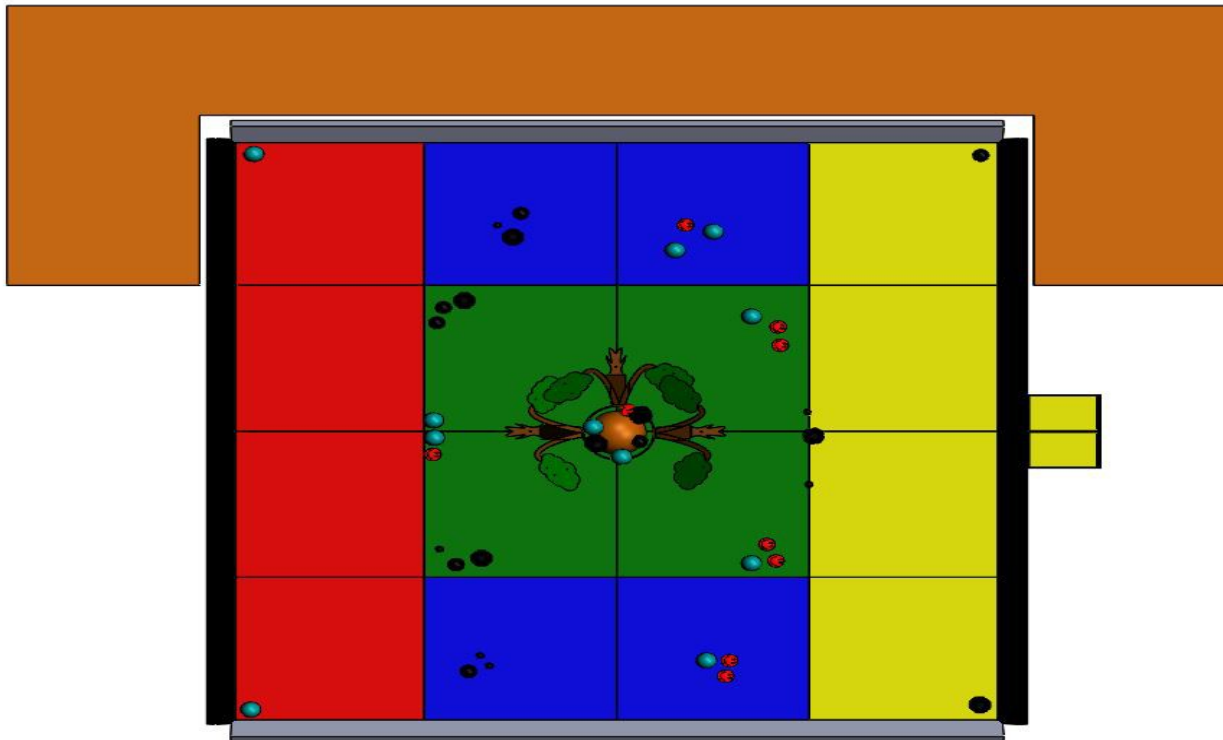
Section 2 – The Game

2.1 – Overview

This section describes the CREATE Junior game called *Recycle Rescue*. It also lists the game definitions and game rules.

2.2 – Game Description and Field Drawings

Matches are played on a field initially set up similar to the figure below.



Four teams, making up an Alliance, collaborate, using their envirobots, in each match. The object of the game is to attain the highest score possible by working together to clean the park (green space) and lakes (blue spaces) from all the trash (black objects) and recyclables (non-black objects), that careless park visitors have left behind. Recyclables should all go into the recycle staging area (yellow space) or into the recycle bins attached to the field perimeter adjacent to the recycle staging area. The trash should all be moved to the landfill (red space), using up as little of the landfill as possible. Get all the trash out of the tree and completely clean the park and lakes for bonus points. Then, before time runs out, get your envirobots out of the area for even more bonus points.

There are a total of twenty(20) pieces of trash (black objects of various sizes and shapes) and twenty four (24) recyclable objects (all scoring objects that are NOT black). The recyclables include twenty(20) smaller pieces, three(3) plastic cups and one(1) large ball.

Scoring Task	Points
Each piece of trash moved to the landfill	1
Each piece of recyclable moved to recycle staging area	1
Each piece of recyclable moved into the recycle bins	3
Cleaning Bonus	
Completely clean the green space (this includes the tree)	25
Completely clean one lake	5
Completely clean second lake (Total clean lake bonus is 5 + 15 = 20 points)	15
Landfill Bonus	
Keep all trash in two landfill tiles	5
Keep all trash in one landfill tile (Total landfill bonus is 5+15-20 points)	15
Exit Bonus	
First robot exiting the field before time expires	5
Second robot exiting the field before time expires	5
Third robot exiting the field before time expires	10
Fourth robot exiting the field before time expires (Total max exit bonus is 5+5+10+20 = 40)	20

It is very important not to push any trash or recyclables onto the neighbors (outside the field). For every piece of trash found outside the field of play, one(1) scoring piece of trash will be removed and will not be scored. For every piece of recyclable found outside the field of play one(1) piece of recyclable will be removed from the recycle staging area. If no recyclables are found in the staging area then a recyclable will be removed from the recycle bin.

It is also very important not to mix trash and recyclables. For every piece of trash found in the recycle area, one piece of recyclable will be removed and will not score. Recyclables will first be removed from the recycle staging area. If there are no objects in the staging area, objects will be removed from the recycle bins. Likewise, for every piece of recyclable found in the landfill, one piece of trash will be removed from the landfill, and will not count.

2.3 – Game Definitions

Alliance – Four(4) randomly paired teams that work together during a match.

Coach - A student or adult designated as the team adviser during the tournament.

Driver - A team member responsible for operating and controlling the Robot. Only the two drivers from a team are allowed to be in the Driver’s Station during a match.

Driver Change – Changing from the first to the second driver in the middle of the match. The change must occur between :30 and :60 seconds.

Driver’s Station – The designated region where the drivers stand during any match.

Exited – A robot is considered to have exited the field when the robot is outside the field of play and does not

touch any part of the field or field perimeter.

False Start – A robot moving before the match begins will be considered to have false started. A five (5) point penalty will be assessed for each robot that false starts. If the false start is severe, at the discretion of the referee, the robot may be disqualified.

Match - A one minute and thirty second driver controlled period. A match starts when the referee says “Go”.

Pre-placement of Robots – Each team is allowed to place their robot on the field in the following manner. One robot must be placed in each corner of the field such that the robot is touching two sides of the perimeter.

Pre-loads – Each corner of the field has one scoring object on it. Teams may pre-load this object onto their robot, or place that scoring object anywhere within their corner starting tile.

Recyclables – Any of the twenty-four(24) non-black objects in the tree, park or lakes.

Removed from the field – Any game object that leaves the field. All objects that leave the field of play stay out for the duration of the match.

Robot – Anything (which has passed inspection) a team places on the field prior to the start of a match.

Team Member – Any of the participants that make up the team. Team members may assist the drivers with the pre-placement or pre-loading of the robot. Only the two drivers (per team) are allowed in the Driver’s Station for the match.

Trash – Any of the twenty(20) black objects in the tree, park, or lakes.

2.4 – Game Rules

2.4.1 – Scoring

- Pieces of trash are considered to be scored if they are in they are touching red tiles and no part of the trash is touching any other color tile.
- Recyclables are considered to be scored in the staging area if they are touching yellow tiles and no part of the recyclable is touching any other color tile.
- Recyclables are considered to be scored in the recycle bins if they are more than 50% in the bin as judged by the referee.
- The 25 point park cleaning bonus is earned if all trash and recyclables are removed from both the tree and green space. No piece of trash or recyclable may be touching any part of any green tile or tree to earn the park cleaning bonus.
- A lake is considered clean if no piece of trash or recyclable is touching the blue tiles. There are two lakes, each made up of two tiles. 5 points is earned for cleaning one lake. An additional 15 points is earned for cleaning the second lake.
- In order for the landfill bonus to be earned ALL pieces of trash must be in the landfill. If even one piece of trash is outside the landfill no landfill bonus can be earned. If all trash is in the landfill and one red tile has no pieces of trash in it or touching it a 5 point bonus is earned. Further, if all pieces of trash are in the landfill and two red tiles have no pieces of trash in it or touching it, then an additional 15 point bonus is earned.
- A robot is deemed to have exited the field if it is outside the field of play and is not touching the metal perimeter.

- A total of 40 robot exit points can be earned. 5 points for the first robot to exit the field of play. An additional 5 points for the second robot to exit the field of play. An additional 10 points for the third robot to exit the field of play. 20 additional points for the fourth robot to exit the field of play. Robots must exit the field of play before time expires.

2.4.2 – Safety Rules

<S1> If at any time the *robot* operation is deemed unsafe or has damaged the playing field, surface, barriers or wall, by the determination of the referees, the offending team may be disqualified. The *robot* will require re-inspection before it may take the field again.

<S2> If a robot gets hung up on the perimeter or drives out of the field, teams MAY place the controller on the ground. The **driver** may slowly walk around the field to the stranded robot to place it back into the field. The robot should be placed just inside the point that it got stuck and should follow the guidelines below. The driver may then walk back to the driver's station and pick up the controller to continue as before. If teams are not performing this action safely, the Alliance may be disqualified at the discretion of the referee.

- a. The robot should be placed in the field as near to where it became caught on the side rail as possible.
- b. The robot cannot be touching any robot or any game elements that were not already captured by the robot at the time of getting stuck. An object is captured if the robot can be lifted straight up and the object stays with the robot.

<S3> If a *robot* goes completely out-of-bounds (outside the playing field) and continues to move, clear intent of returning to the field MUST be demonstrated. If a robot is being driven with any other intent, the robot/Alliance may be disqualified or stopped and the match ended at the discretion of the referee. A robot may not re-enter the field in a scoring position. This rule does not apply if robots are trying to earn the exit bonus at the end of the match. THIS RULE DOES NOT APPLY AT THE END OF THE MATCH WHILE ROBOTS ARE TRYING TO EARN THE EXIT BONUS.

2.4.3 – General Game Rules

<G1> At the beginning of a match, each *robot* must not exceed a volume of 14 inches wide by 14 inches long by 14 inches tall. An offending *robot* will be removed from the *match* at the Head Referee's discretion.

- a. Alignment devices (templates, tape measures, lasers, etc.) that are not part of the *robot* may NOT be used to assist with the positioning of the *robot*.

<G2> For each match, teams shall include two *drivers*. The *drivers* may change from match to match.

<G3> During a *match*, the *drivers* are the only people allowed in the drivers station.

<G4> **Any** team member may assist in Pre-placement of the robot or the pre-load of the scoring object.

<G5> Scoring objects that leave the playing field are considered out of play. They will not be returned to the field for that match.

<G6> *Drivers* are prohibited from making intentional contact with any game or field object. The first instance of intentional contact will result in a warning, with any following instances resulting in disqualification.

<G7> During a *match*, *robots* may be remotely operated only by the *drivers*.

<G8> *Robots* may not intentionally detach parts during any *match*, or leave mechanisms on the field. Multiple infractions may result in disqualification for the entire competition.

<G9> *Robots* must be designed to permit easy removal of scoring objects from any grasping mechanism without requiring that the *robot* have power after the *match*.

<G10> Field tolerances may vary by as much as +/-1". Teams must design their *robots* accordingly.

<G11> At the discretion of the event partner the lowest score from each team may be dropped in determining final standings.

2.4.4 – Recycle Rescue Specific Game Rules

<SG1> At the beginning of each *match*, the *robots* must be placed such that they are in their respective corners and touching the two field perimeter walls that make up the corner. Only one robot per corner.

<SG2> *Drivers* must change (*Driver change*) sometime between 30 and 60 seconds of the *match*. *Driver* one may hand the remote to *driver* two anytime between 31 and 59 seconds on the clock. If a team exchanges the remote too early or too late in a *match* the robot may be disqualified for that *match* at the discretion of the referee. If the remote is exchanged significantly outside of the designated time, the referee may disqualify the *alliance*, which will receive a zero score for that *match*.

<SG3> Only the second driver may earn the exit bonus by leaving the field of play.