



General Rules

Effective August 1, 2014

The General Rules should be used in conjunction with the Annual Challenge Rules and Missions, and the instructions for the Board and Field Setup. The General Rules form the basis for all the competitions and should be followed unless superseded by rule changes in the Annual Challenge Rules and Missions document.

Eligibility	
Rule 01	The RCX Program is open to students of any school. Students compete in three Divisions: Elementary (up to 5 th Grade), Middle School (6 th to 8 th Grade) and High School (9 th to 12 th Grade). College students are encouraged to mentor teams, but should not do the work and are not eligible to compete. The RCX Program partners with local and state organizations. These partnerships may limit participation.
Rule 02	A team can consist of 1 to 10 students. ONLY (2) two team members can be at the board at the same time during the Match. During the Match, team members can trade off to allow multiple team members an opportunity at running the robot. Remember, only two team members at the board at the same time. The referees need room to move around the table.
Rule 03	Each school may enter multiple teams. Schools may compete at multiple tournaments.
Rule 04	A student may participate on ONLY (1) one team, and compete at ONLY (1) one tournament.
Rule 05	Teams cannot share a robot: NXT, EV3, or RCX during the tournament.
Rule 06	Younger students may participate on a team up a division. However, older students may never participate on a team down a division. Also see Rule 07
Rule 07	This rule is to clarify Rule 06. If you have a mixed team of elementary and middle school students, that team competes as a middle school team. If the team consist of middle school and high school students, that team competes as a high school team. The grade of the oldest team member determines the division the team will compete in. Teams will NOT move up a division for competition purposes only.



Board & Mat

Rule 08	Board- See the How to Build The Board document for information on constructing a Board.
Rule 09	Mat- Unless stated otherwise in the Challenge Annual Rules and Missions document, the Mat should be placed on the Board against the North and East walls first, then fit to the South and West walls, cut if necessary. If the Board is too big for the Mat, leave the extra space on the South and West walls.
Rule 10	Border/Railing- The line that borders the Mat extends to the inside of the black railing of the Board. The inside and top of the railing are considered in-bounds. The outside of the railing is considered out-of-bounds and should not be used by the robot and/or attachments.
Rule 11	The entire Quad Platform is considered in-bounds, sides and top. As well as the area underneath. Action on The Quad Platform will be defined in the Challenge Annual Rules and Missions document.
Rule 12	Clarifying the Safe Zone Line- The black line, immediately adjacent to the Safe Zone, which borders the Safe Zone, is considered part of the Safe Zone. This does not include any other part of the black line that borders the rest of the mat or extends into the mat.

Robot Construction

Rule 13	<p>Teams may use either the NXT, EV3 or RCX robot format. Limitations for these robots are as follows. The robot may use unlimited official LEGO motors and sensors.</p> <p>NXT Limitations</p> <ul style="list-style-type: none">- One NXT brick only- Servo Motors unlimited- Touch Sensors unlimited- Light Sensors unlimited- Other Sensors/Electronics: You may add additional official LEGO sensors/electronics. <p>EV3 Limitations (The EV3 has many advanced options, operation of this robot MAY NOT utilize any form of Blue Tooth &/or wireless communication during the Tournament)</p> <ul style="list-style-type: none">- One EV3 brick only- Servo Motors unlimited- Touch Sensors unlimited- Light Sensors unlimited- Other Sensors/Electronics: You may add additional official LEGO sensors/electronics. <p>RCX Limitations (LEGO has discontinued the RCX robot, you may continue to use the RCX)</p> <ul style="list-style-type: none">- One RCX brick only- 9-volt motors or Micromotors unlimited.- Rotation Sensors unlimited - Touch Sensors unlimited- Light Sensors unlimited- Other Sensors/Electronics: You may add additional official LEGO sensors/electronics. <p>Further clarification- your robot may have only (1) one brick used to operate all action of the robot during a Match. You may use as many official LEGO sensors/electronics on your robot as your team can design. This rule will be reviewed at the end of each year to ensure fairness among all teams.</p>
---------	---

Rule 14	The robot may consist of as many LEGO building pieces as needed. However, participants cannot alter LEGO pieces in any way or use other substances such as oil, glue or tape. Only USE official LEGO pieces. Also see Rules 15, 16, 17, 18 and 19.
Rule 15	Adding to Rule 14, participants cannot use rulers, paper, tape, etc. to line up the robot in the Safe Zone. These are not official LEGO parts and are not allowed. Recommendation- use LEGO's to build a "jig" to align the robot.
Rule 16	The exception to Rule 14- LEGO tubing and LEGO string can be cut to length.
Rule 17	LEGO Pneumonic's are allowed in the RCX tournament.
Rule 18	LEGO Bionicles are NOT allowed. They are official LEGO parts but they offer ready-made solutions. We want to encourage creative solutions. Parts in the NXT kit are not Bionicles.
Rule 19	The robot defined. The robot consists of all the LEGO pieces used to construct the body of the robot and the attachments connected to the robot. Attachments may be added/ removed as outlined in subsequent Rules.
Safe Zone	
Rule 20	When starting a Match and subsequent robot runs, the robot must start from the Safe Zone, all parts of the robot that touch the mat must be within the Safe Zone. The robot or attachment may hang outside of the Safe Zone as long as it does not touch any surface. Once robot action (See Rule 26) has started, any attachment may touch the mat. If at start, the robot's attachment is touching the mat outside the Safe Zone, the team will receive a Touch Penalty and have to restart the robot. See Rule 32.
Rule 21	When the robot is inside the Safe Zone, team members may manipulate the robot by hand without penalty. This includes loading/unloading Retrievable/Deliverable Objects and/or adding/removing attachments.
Rule 22	Deliverable Objects- Deliverable Objects are usually located in the Safe Zone, but may be out on the mat. If the objects are in the Safe Zone, participants can pick up the objects with hands and fingers, and place them in the control of the robot. The robot would then need to deliver the object to its destination.
Rule 23	Deliverable Objects- Prior to the start of the Match, team members may stage the Deliverable Objects on the robot as necessary before the clock starts.
Rule 24	Deliverable Objects- When delivering an object, teams cannot attach additional LEGO pieces to the Deliverable Object. Once the object is delivered, it must NOT have additional Lego's attached. This includes multiple Deliverable Objects, they may not be attached together.
Rule 25	At the start of each robot run, the robot, attachments, and Deliverable Objects must follow Rule 20.
Rule 26	Robot action is defined as activity/ motion generated by the robot. If the referee feels the activity/motion is caused by a team member, example, team member holds attachment off mat, releases the attachment as team member activates the robot, allowing the attachment to touch the mat. The attachment's action is the result of the team member and NOT the robot, this would result in a touch penalty and the robot would need to be restarted in the Safe Zone. See Rule 32

Rule 27	<p>Exiting the Safe Zone – As long as part of the robot is in the Safe Zone (touching or overhanging), team members may touch the robot without penalty. Once the entire robot leaves the Safe Zone, it is considered out of the Safe Zone. If touched you will receive a Touch Penalty and must restart the robot back in the Safe Zone. See Rule 32</p> <p>Exiting the Safe Zone defined, once the entire robot and attachments have crossed the outside edge of the black line, the robot is considered out of the Safe Zone.</p>
Rule 28	<p>Entering the Safe Zone - As soon as any part of the robot (touching or overhanging) crosses into the Safe Zone the robot can be touched without penalty. The entire robot does not need to be in the Safe Zone. Once inside the Safe Zone teams can make adjustments to the robot. Time does not stop when your robot is in the Safe Zone.</p> <p>Entering the Safe Zone defined, once the robot and/or attachments have crossed the outside edge of the black line, the robot is considered in the Safe Zone.</p>
Rule 29	<p>Retrievable Objects- If the robot has crossed into the Safe Zone and "Reasonably Controls" a Retrievable Object(s), it is considered "In" the Safe Zone also. The Retrievable Object itself does not need to cross the black line into the Safe Zone as long as part of the robot has broken the plain of the black line. Reasonably Controlled objects could be, but not limited to; pushed, pulled or carried by the robot.</p>
Rule 30	<p>Object(s) retrieved to the Safe Zone may be left in the Safe Zone. If the annual missions require the need, an extension of the Safe Zone will be located off the mat and explained to teams at the coaches meeting, this will allow for storage of scoring items off the mat. Relating to Rule 21, teams may temporarily place scoring items outside of the Safe Zone while handling the robot. However, if scoring items are left on the mat, outside of the Safe Zone when time runs out, you lose the ability to score those items.</p>
Outside of the Safe Zone	
Rule 31	<p>Scoring- The robot must completely exit the Safe Zone to deliver/retrieve an object. The robot must completely exit the Safe Zone before it can activate, open/close, push/pull, or effect element pieces in any manor on the mat. As defined in Rule 19, the robot includes the robot body AND attachments.</p>
Rule 32	<p>Touch Penalty- Any time a team member touches the robot outside of the Safe Zone, the referee will assess a Touch Penalty. The team must pick up the robot and restart the robot in the Safe Zone. Or if the robot starts from the Safe Zone, but is touching outside the Safe Zone at start, then leaves the Safe Zone, the referee will instruct the team to restart the robot from within the Safe Zone resulting in a Touch Penalty.</p> <p>Or at the start of a robot run, if the robot motion is the result of a team member and not the robot programming, the referee will assess a Touch Penalty and the robot must be restarted in the Safe Zone.</p> <p>Make sure to review Rules 32 through 39, these Rules work together.</p>
Rule 33	<p>Touch Penalty- The Touch Penalty object is defined annually in the Challenge Annual Rules and Missions.</p>
Rule 34	<p>Touch Penalty- Any time a team member can't reach their robot, the referee will gladly assist---pick up the robot. Understandably, the team will be assessed a Touch Penalty. They were going to touch the robot outside of the Safe Zone if they could reach it. The team will start again in the Safe Zone.</p>
Rule 35	<p>If a LEGO piece(s) falls off of your robot, you may pick up the LEGO part without penalty. Notify the referee of your intention to avoid the referee questioning the team member's action.</p>
Rule 36	<p>If a LEGO piece(s) falls off but it is attached somehow to your robot. I.e. wires, tubes or LEGOs, it is considered part of the robot. Touching it outside of the Safe Zone would result in a Touch Penalty.</p>

Rule 37	If your robot is out of the Safe Zone and controlling or touching a Retrievable or Deliverable Object and a team member touches the robot, the Retrievable/Deliverable Object will be placed on the mat where the robot was located when it was touched. Retrievable/deliverable objects will never be reset.
Rule 38	If the robot attempts a deliverable task and returns to the Safe Zone, by its own power, with the Deliverable Object still in control of the robot, the team may reset the robot and attempt the task again without penalty.
Rule 39	In the process of retrieving/delivering an object, if the object falls off the robot, that object will stay where it lies. It can be retrieved/delivered ONLY by the motoring of the robot and attempted again. Team members cannot retrieve the object with their hands.
Miscellaneous	
Rule 40	Don't bring a practice mat to the tournament.
Rule 41	Bluetooth has the capabilities of being used as a form of remote control. The contest does not allow any form of remote control. All maneuvering of the robot must be done via computer programming. All teams should TURN OFF the Bluetooth function before arriving at the competition site.
Rule 42	Annual Challenge: The Challenge Annual Rules and Missions document may override the General Rules. Follow the Challenge Annual Rules and Missions document first, then the General Rules. Should a General Rule conflict with the rules/missions of the Challenge Annual Rules and Missions without being notated in the Challenge Annual Rules and Missions, teams should notify the RCX Challenge Manager and request a rule clarification. Review the Q&A for clarification. Absent of a rule clarification at the time of the tournament, the Head Referee will make a ruling to benefit both the team and the integrity of the RCX Program.
Rule 43	Missions, as defined in the Challenge Annual Rules and Missions document, may be attempted individually or collectively.
Rule 44	Time: The length of time for a Match is (3:00) three minutes.
Rule 45	"Time": When your team is finished with the Match, go to the West side of the Board, raise your hands and call "Time". The referee will wait for all motor action of the robot to stop, then write down the remaining time on the clock.
Rule 46	Scoring: The referee will score the Board at the end of the Match. Points will be awarded based on how the Mat looks at the end of the Match.
Rule 47	Scoring: Matches are scored individually, and are not added together. Teams are ranked from highest to lowest based on individual Match scores from all Matches, throughout all Rounds.
Rule 48	Tie-Breaker: Should multiple teams end all Rounds with an equal score, teams will be ranked by using both their score and "Time" remaining on the clock from the highest Match recorded. Teams with the same score will be ranked higher if the "Time" remaining is higher than their opponents. If multiple teams finish all Rounds with equal scores and equal times, teams will compete in an additional Round, pairings established by the Tournament Host.
Rule 49	General Information: The RCX Program, tournaments and referees are all volunteers. Please respect their decisions. We all participate in the RCX Program for the benefit of the students. Everyone, including team members and adults, should conduct themselves in a professional manor at all times.