

General Rules 2010: Regular category

[1] The rules of competition at WORLD ROBOT OLYMPIAD are constituted by the WORLD ROBOT OLYMPIAD Steering Committee (“the committee” in the following paragraphs), and are only applicable during this tournament

1. A surprise additional rule will be announced on the morning of the competition.
2. The announcement of this additional “surprise” must be handed over to each team in writing.

[2] Qualification for participation and team composition

1. Age of participants

Competition groups

- “*Elementary School age*”: Birthday falls on or after January 1. 1998
- “*Junior High School age*”: Birthday falls in the period Jan. 1 1995 to Dec. 31. 1997
- “*High School age*”: Birthday falls in the period Jan. 1. 1991 to Dec. 31. 1994
- Participants are not confined to school-going students. Anyone can participate in the corresponding age groups.
- College and university students may participate if the individual students fit into the HS age group bracket!
- College and university students older than HS age group may participate in “College & University Exhibition” if invited by the host country.

Exhibition group

- “*College/university age*”: Any student born before January 1. 1991

2. Team composition

A team consists of 1 coach and 2 or 3 contestants.

A team with 1 coach and 1 constant is not regarded as a team, and cannot participate.

3. Team coach

- Minimum age at participation in international WRO tournament is age 20.

[3] Material:

1. Except for specific designations in competition rules, materials used to assemble their robots, including controller, must be from LEGO® MINDSTORMSTM RCX and/or LEGO® MINDSTORMSTM Education NXT sets. Control programs must be ROBOLAB or LEGO® MINDSTORMS NXT software (Education version). A team using materials and control programs that are not approved by the committee will be disqualified at that match.
2. Teams should prepare and bring all the equipment, software and portable computers they need during the tournament.
3. Teams should bring enough spare parts. Even in the case of any accidents or equipment malfunction, the committee is not responsible for their maintenance or replacement. Coaches are not allowed to enter the court for any instructions and guidance during competition.
4. All the parts for the robot should be in the initial states (not pre-built) when the assemble time starts. For example, a tire cannot be put on a wheel until assemble time begins. Competitors may not use any instruction sheets or written, illustrated or pictorial.
5. Contestants may make the program beforehand.
6. Robots are not allowed to use screws, glues or tape to fasten any components. Non-compliance with these rules will result in disqualification.
7. The motors and the sensors for the robot are supplied by LEGO, as shown below. Any third-party products are not acceptable. Teams are not allowed to modify any original parts (for example: RCX, NXT, motor, and sensors, etc). A robot made with modified parts will be disqualified at that match.

[4] Regulations about robot:

1. The maximum dimensions of the robot before it starts must be within 250mm × 250mm × 250mm. After robot starts, the dimension of the robot is not restricted.
2. Teams are allowed only one controller (RCX or NXT).
3. The number of motors and sensors to be used are not restricted.
4. Any actions or movements by the participants are not allowed to interfere or assist the robot while it is running. Teams that violate this rule will be disqualified at that match.
5. A robot must be autonomous and finish the missions by itself. Any radio communication, remote control and wired control systems are not allowed while the robot is running. Teams in violation of this rule will be disqualified and must quit the competition immediately.
6. If robot is equipped with NXT as a controller, the Bluetooth function must be switched off and downloading programs must be done through USB cable.

[5] Prior to competition

1. Each team can prepare for the match in their specified place until the check time. And team can't touch the competition court before announcing assemble time starts.
2. Judges will check the states of parts before announcing assemble time starts, and teams must show their parts separated. Teams cannot touch parts and PC during this check time.
3. The assemble time doesn't begin until the committee announces it.

[6] Competition

1. The competition consists of 2 matches, assembly time, programming and testing time.
2. Contestants can't assemble robot excluding assemble time, maintenance and testing time.
3. Teams will be given time for assembling and programming the robot before each round. (for example in international WRO: 150 mins. for round one, 60 mins. for second round.)
4. Contestants assemble after announcement from the committee, and can start the programming and test runs. Teams must place robot on the inspection area when assemble and testing time ends. After the judge confirms that the robot meets all regulations, the match can begin.
5. After the first match ends, maintenance and testing time are given. Contestants can bring the robot back to assemble area, improve performance and do test runs. Contestants must put the robot back on the specified position when the maintenance and testing time ends . After the judge confirms that the robot meets all regulations, the second match can begin.
6. The score calculation is done by the judges after each match. The contestants must be quick to sign the score sheet after the match of each team if they have no fair complaints.
7. The ranking is decided by the best score of two matches. If the competing teams acquire the same points, the ranking is decided by the record of time. If teams have the same record of time, those teams will have the same ranking.
8. If a violation is found at the inspection, the judge will give the team 3 minute to convert the violation. However, it is not possible to participate in the match if the violation is not corrected during the time given.
9. While assemble and testing time are over, it is not allowed to modify or exchange the robot (for example: downloading programs, changing batteries). Team cannot request time out either.

[7] Court

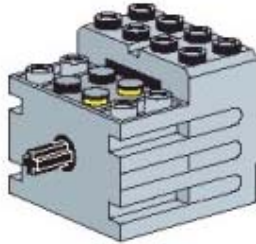
1. Team must assemble their robot in an area designated by the tournament (each team has its own area). Other people are not allowed to enter the competition area except contestants, WRO organizing committee staff and special personnel.
2. The standard of all competition materials and courts are according to what are provided by the committee on the competition day.

[8] Prohibited matters

1. Destruction of competition courts, materials or robots of other teams.
2. Use of dangerous items or behaviors that may cause interference.
3. Inappropriate words and/or behavior toward other teams, audience, judges or staff.
4. Bringing a cellular phone or a medium of wire/wireless communication or drink or food in the court
5. Any communication devices and methods are strictly prohibited while the competition is in process. Anyone outside the competition area is also banned from talking to or communicating with contestants. Teams violating this rule will be considered as disqualified and should quit the competition immediately. If communication is necessary, the committee may allow team members to communicate with others under supervision by tournament staff or by exchanging a note under permission by judges.
6. In any other situation which judges might consider as interference or violation of the spirits of the competition .

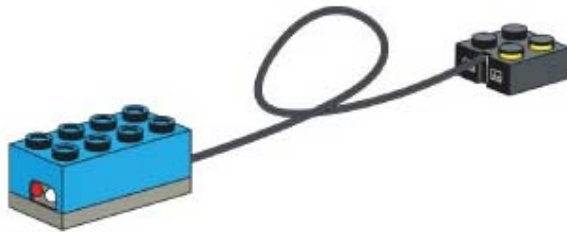
Eligible motor and sensors for Regular category

5225



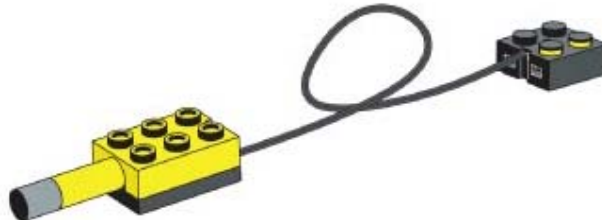
LEGO TECHNIC
Gear Motor

9758



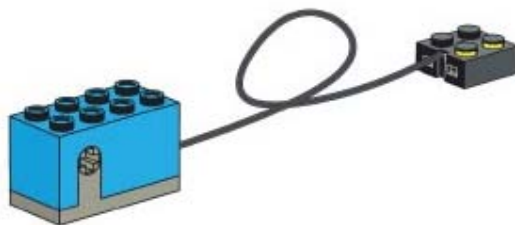
RCX Light
Sensor

9889



RCX
Temperature
Sensor (9V)

9891



RCX Angle
Sensor (9V)

9911



Touch Sensor
and Leads

9842



NXT Motor with
Tacho

9843



NXT Touch
Sensor

9844



NXT Light Sensor
(**not the color sensor**)

9845



NXT Sound
Sensor

9846



NXT Ultra Sonic
Sensor

General Rules 2010: Open Category

Rules

1. A team may only participate in Regular or Open Category. Not both!
2. The competition will take place within three age groups: Elementary, Junior High, High school category.
3. There is no restriction on the balance between LEGO elements and other materials.
4. All robots must be operated by RCX or NXT controller and any software.
5. Robots may be preassembled and software program may be pre-made!
6. The size of booth will be 2m x2m x 2m.
7. The size of table will be 120cm x 60cm.
8. Open Category teams must go through this process:
 - Final assembly and test of robot
 - Decorate the booth with posters.
 - Demonstration to the judges and Q & A from judges.
9. Teams must submit a report summarizing what the robot can do, and in which way the robot is unique. The report must be handed out to the judges in paper form.
10. Visual description materials must be submitted by pictures/photos/video from different angle of the robot creation and example of the program.
11. Teams must submit a video according to instruction upon registration. (maximum of 2 minutes)
12. Teams must decorate the booth with one or more posters with the dimension of minimum 120 cm x 90 cm. The poster(s) should introduce the robot project to the visitors.

Presentation

1. The judging will be executed in three age groups: Elementary school, Junior High school, High school.
2. Teams will have around 10 minutes for judgment: 5 minutes to explain and demonstrate the robot, remaining 2-5 minutes for Q & A from the judges.

Judging Criteria per Category

1. Video Judge. Total points: 30
 - Design is based upon the theme given
 - Creative design and structure of robot
 - Presentation Quality
2. Most Creative Design. Total points: 40
 - Creative appearance
 - Unique, complex, interactive behaviour
3. Best Technical Design. Total points: 20
 - Good Engineering
 - Stable Structure
4. Best Presentation. Total points: 40
 - Successful and stable demonstration
 - High team spirit and energy
 - Clear concept in presentation, poster and report
5. Minus Points. Total points: 30
 - NO RCX or NXT
 - No Poster
 - No Report
 - Exceeds the maximum display area provided

If clearly not within the theme, we give 0 points as a final score!

Judging rules for Regular and Open category

1. The judges have final authority during the tournament.
2. Disagreements, complaints or appeals (all in English) must be directed to the judges before signing the score sheet (Reg. cat.) or before the judges leave the booth (Open cat.)
3. In case the team cannot accept the decision of the judges, the head judge will make the final decision. The deputy head judge should be present during the deliberation in case the head judge has same nationality as the appealing team. The final decision cannot be appealed or changed!
4. If a team is considered disqualified by the judges and head judge, such team should quit the tournament immediately, and receives no score.
5. The Regular score sheet cannot be changed after it has been signed by the team, except if there is any obvious error in the signed score sheet and the team should be notified before the final announcement.
6. Teams may give gifts like souvenirs and mementos to anyone. Gifts will not influence the judging.
7. Any complaints or appeals arriving after the score sheet have been signed in Regular category or the judges have left the Open category booth, will not affect the actual scoring. However such complaints and appeals may be directed to the WRO Steering Committee (possibly via the person doing the coach briefing). The WRO Steering Committee will investigate the matter and take necessary actions regarding future WRO competitions
8. If changes to the score sheets are necessary, the teams will be informed immediately.