Racing

Teams start with a qualification round. The time from the qualification round is used to create racing groups. The better the qualification time is, the higher group will be assigned. After the qualification rides, teams will compete against each other within the groups.

Assignment for High school teams
The models must have at least two driven axles. A driven axle might be used for steering (in the fashion of a car), traction or both (all wheels drive). The only points of contacts with the floor might be wheels covered with a tire. If a model does not comply with this restriction, it shall be disqualified from the race. This assignment is obligatory only for high school teams.

Categories:

Contestants are split into two separately competing categories.

Lego - All the functional components, robot chassis, bodywork, and steering must be made from Lego. The only exceptions are wheels, wireless transmitter, and wireless receiver. Other Lego compatible components and 3rd party extensions are not permitted.

Electronics - The model might be built from anything not prohibited in the rules. Electromotors, servos, bodywork, wheels, wireless transmitter and receiver and batteries can be bought. Chassis, steering and all the other parts must be made by students.

Models in Electronics category might contain these components:

- Electromotor, regulator, servo
- wireless transmitter and receiver
- batteries
- custom electronics, gyroscope, and other sensors
- suspension, differentials, axles, split axles
- components made by students
- 3D printed parts

Parts prohibited from Electronics category:

- complete steering from an RC car
- complete RC car kit (rear axle is allowed)

- use of an existing steering solution
- use of an existing 3D printable model
- combustion engine

The best tech award

Models in both are also running for the best tech award. Models will be evaluated and checked before the qualification round. Models used in the qualification round must be identical with the model used in the race.

Qualification and groups:
Teams will be split into groups from A to F based on their qualification time. The qualification round will be measured on a shorter track with a time limit of 5 minutes. The race starts with the lowest group (F). Two fastest models from each group proceed to a higher group.

Track:

The track has borders with a minimum height of 3 cm, straight sections of a variable length as well as turns and ramps. The minimal width of the track width is 50cm. Obstacles might be placed on the track in a way that distance between the obstacle and a wall is at least 35 cm and might be attached to the floor.

Jumping ramp - a shortcut on the track. In order to use the shortcut, the model must jump from a ramp with a maximum lean angle of 20 degrees and a height of 15 cm.

Pit stop - you shall not touch your model during the race. However, there is a pit stop positioned next to the start line. Should you touch your model outside of the pit stop,it will be moved to the pit stop losing the progress in your the current round.

Floor surface - The race happens on a wooden floor. It is highly suggested to use tires with a good grip and precise motor regulation.

Main rules:

1. Contact between models is permitted provided models will not be damaged in any way.
2. Models can be autonomous or remote controlled.
3. If a model has been damaged during the race, it can be brought to the pit stop and repaired. A number of finished rounds are preserved.
4. In the case of a mass collision, models will be separated and returned to a driving position by jury as soon as possible. If a model has been damaged, it will be returned to the start.
5. Contestants shall not enter the track during the race.
6. Models must have an identification flag on them attached by Lego brick during the race. The

identification flag will be given to teams right before the start of the race.

Breaking these rules might result in disqualification.

Restrictions:
Maximum number of motors the model can have is 5.
Maximum model footprint is 40x30x40cm (length x width x height)
Maximum weight of robot is 3kg.
Models shall not be bought and must be made by students.

RBA is not responsible for damage caused on models during the contest..