



Robot Vacuum

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[Robot Vacuum Challenge Description](#)

The Robot Vacuum Challenge requires participants to develop their very own robot vacuum to clean a changing environment of lego pieces!

Please contact us at orcinfo@ieeeottawa.ca if you have any questions about the robot vacuum challenge arena.

[Challenge Rules](#)

1. All robots must be built and programmed to the specifications outlined in our [Lego Competition Rules](#). Exceptions are listed in the rules below, any robots not adhering to these specifications will be disqualified for the match and can rejoin once the robot meets the specified requirements.
2. No members of any team will be allowed inside the arena. **-No Exceptions.** The Team leader is responsible for ensuring the correct program is selected on the robot. The team leader will give the judges there robot to be placed inside the arena.
NO programs can be changed once the robot is in the arena.
3. Robots are placed in each of the four corners of the 10 foot by 10 foot arena.

4. At the start of the challenge, the judges will say, "Three, *trois*, two, *deux*, one, *un*, Go!" before activating both robots to start the challenge.
5. Once the battle has started, robots **must** wait 5 seconds before moving and will then have 10 minutes for the entire challenge. **Each team must show the judges their program proving that the robot will wait 5 seconds. If the robot does not wait 5 seconds they will be disqualified.**
6. The objective is to pick up as many Lego pieces as possible, within the allotted time, and transport them to the robot's designated corner **OR** have the robot carry all of its Lego pieces (important: in order to count, the Lego pieces must not be touching the ground or touching other Lego pieces that are touching the ground). The robot with the most Lego pieces in their corner or carried by their robot wins.

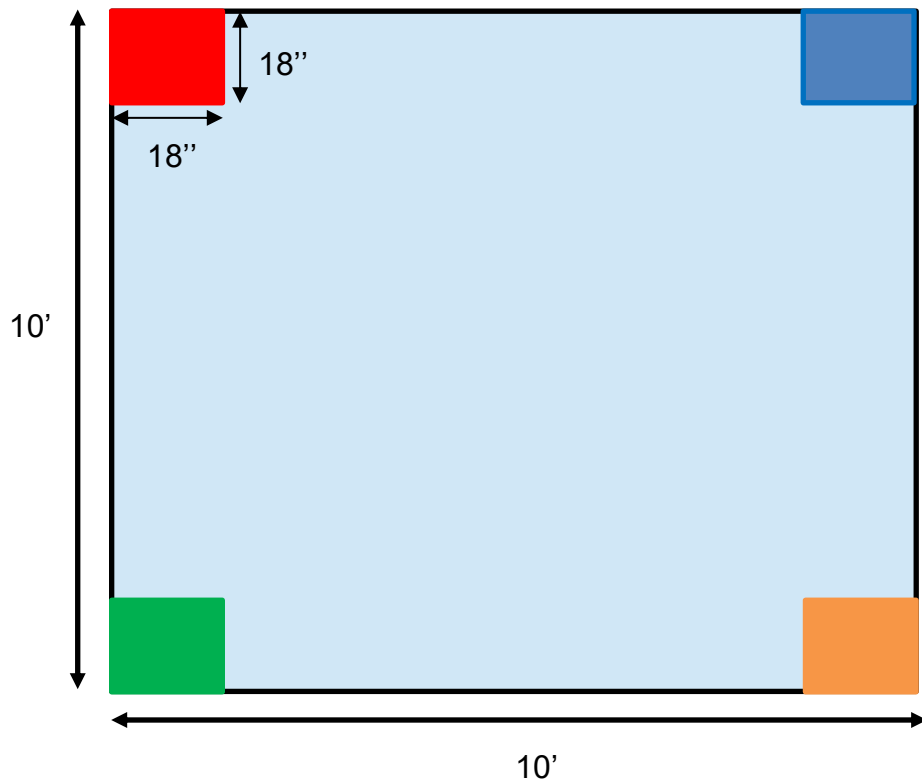
Judging and Scoring

1. Judges will time each match.
2. Your competition day rank will be worth 70% of your final score. Judges will also [interview](#) your team (30% of the final score).
3. The competition will consist of the following point system. A final round of the top four robots will be held to determine the final rankings.
 - All Lego blocks will be similar in size and weight, however:
 - i. **+6 points** for every Lego piece held by the robot
 - ii. **+2 points** for every Lego piece in the robot's allotted corner
4. **Decisions of the judges are final.**

Arena Diagram

The arena is a 10' (3.65 m) square with one 18" square in each corner. The 18" square in each corner will be a 3/4" high platform. This 18" square is where each robot can deposit their lego pieces during the match, it is the starting point for each of the robots.

Top view



Side View

