

# The Competition

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The Competition is a three-day event that takes place annually, in the month of February, at one of the participating schools. The final Competition rules are made public at Kickoff, approximately 3 and a half months before the Competition.

The following presents the typical Competition schedule. The official and detailed schedule is made available a couple of weeks before the Competition at [www.robo-crc.ca/participant-portal](http://www.robo-crc.ca/participant-portal).

- Thursday Morning: Team Arrival and Kiosk Setup
- Thursday Afternoon: Kiosk Setup and Practice Presentations
- Thursday Night: Opening Ceremony and Preliminary Heat Block #1
  
- Friday Morning: Preliminary Heat Block #2 and Evaluations
- Friday Afternoon: Preliminary Heat Block #3 and Evaluations
- Friday Night: Preliminary Heat Block #4 and Evaluations
  
- Saturday Morning: Knock-Out Rounds
- Saturday Afternoon: Quarterfinals, Semi-Finals and Finals, Kiosk Dismantling
- Saturday Night: Closing Dinner and Awards Ceremony

## 1.1 Components

The Competition is divided into seven (7) distinct components, which allows students to demonstrate their strengths in different ways and across various disciplines. While not mandatory, teams may choose a theme that would be applicable to all components of the Competition.

### 1.1.01 Game

This year's game is named Flip 2020. The teams must participate in a tournament with their own radio-commanded robot and must ensure that they follow this game's specific rules and regulations. More information on the game can be found in Section 2 of this rulebook.

### 1.1.02 Robot

The design and construction of the robot primarily involve the application of engineering, science, technology and mathematics to ensure that the robot can participate in this year's game. Since the game changes from year to year, the students cannot reuse the exact same

robot from previous years; however, certain parts and mechanisms may be reused. More information on the robot can be found in Section 3 of this rulebook.

### **1.1.03 Kiosk**

The kiosk acts as an information booth, which presents the team's hard work to judges, fellow participants, and visitors to the Competition. It also acts as a workshop for the team's robot between the heats. The kiosk often represents the team's theme for this year's Competition and essentially involves the application of art and communication. More information on the kiosk can be found in Section 4 of this rulebook.

### **1.1.04 Programming**

The programming component is designed to foster and hone the skills and thinking process required to code professionally. In a truly unique way, participants will tackle various online programming challenges throughout the season in order to qualify for the final round, which will take place at the Competition. Each challenge will provide participants with the required tools to succeed, and challenges will become more complex as teams move forward. More information on the programming competition can be found in Section 5 of this rulebook.

### **1.1.05 Video**

A fully bilingual video must be submitted and be publicly available prior to the Competition and must present the participating school's history as well as a description of this year's game. It must also, among others, demonstrate and elaborate on the construction of the robot, the challenges encountered during the build process and the solutions implemented by the students. This aspect involves the application of technology, computers and languages. More information on the video can be found in Section 6 of this rulebook.

### **1.1.06 Website**

A fully bilingual website must be created and publicly published prior to the Competition, with the goal of demonstrating the hard work of the team to the public. The website must include, but is not limited to, the school's history, a list of participating students, a description of this year's game and the design and construction of the robot. This aspect involves the application of technology, computers and languages. More information on the website can be found in Section 7 of this rulebook.

### **1.1.07 Tutorial**

The tutorial component allows teams to demonstrate their mechanical, electrical, programming, video and coding talents, among others, by providing a step-by-step explanation to achieve any particular task. The tutorial must be accessible on the team's website and can hold various media formats. More information on the tutorial can be found in Section 8 of this rulebook.

## **1.2 Divisions**

With a goal of making the Competition as fair as possible to teams with less experience, the CRC Robotics Organizing Committee has introduced a two-division system for certain elements of the Competition.

- 1.2.01 Teams are divided among Division 1 and Division 2 for the following components:
  - a. Robot Design;
  - b. Robot Construction;
  - c. Kiosk;
  - d. Video;
  - e. Website Content;
  - f. Website Design.
- 1.2.02 This year's Division is based on the overall result obtained by the team in last year's Competition. The team's Division is the same for all previously mentioned components.
- 1.2.03 The top half of the overall ranking will be assigned to Division 1. If there is an odd number of teams, the median team will be in Division 2.
- 1.2.04 The divisions are re-assigned every year.
- 1.2.05 New high school teams are automatically placed in Division 2 while new CEGEP teams and vocational centres are automatically placed in Division 1.
- 1.2.06 A team in Division 2 can win the Overall Ranking award.
- 1.2.07 The best Division 1 and Division 2 teams will receive separate awards for the components based on the ranking for each component.
- 1.2.08 Teams will know their division on the night of the Competition Kickoff. However, if a team registers afterwards, these assignments can be modified. If it is the case, teams will be advised.
- 1.2.09 A Division 2 team can request to be upgraded into Division 1.
- 1.2.10 CRC Robotics has the final say in the division distribution.

## **1.3 Awards and Recognitions**

Awards and recognitions are presented to the most performing team(s) in each component. If the division system is used for the ranking of a particular component, then awards are presented to the most performing team(s) in each division for the component. Refer to Section 1.2 for details on components for which teams will be ranked within their division only. In the event of a tie, both teams receive an award and/or recognition. In this section, an "award" is a prize that is presented for a component whose score counts towards the overall ranking and a "recognition" is a prize that is presented for a component whose score does not count towards the overall ranking.

### **1.3.01 Game**

The Game award is presented to each team that was a finalist in this year's game. Finalists are the teams that participated in the final round of the game.

### **1.3.02 Robot Design**

The Robot Design award is presented to the three teams that received the greatest scores from our engineering judges and that were deemed to have best designed their robot for the purpose of this year's game.

### **1.3.03 Robot Construction**

The Robot Construction award is presented to the three teams that received the greatest scores from our engineering judges and that were deemed to have best constructed their robot for the purpose of this year's game.

### **1.3.04 Kiosk**

The Kiosk award is presented to the three teams that received the greatest scores from our pedagogical judges and that were deemed to have the best designed, best constructed and best maintained kiosk.

### **1.3.05 Programming**

The Programming award is presented to the three teams that achieved the highest scores in the programming component of the Competition and that were deemed to have the best executed code to accomplish the tasks at hand.

### **1.3.06 Video**

The Video award is presented to the three teams that received the greatest scores from our professional/expert judges and that were deemed to have the best executed video.

### **1.3.07 Website Design**

The Website Design award is presented to the three teams that received the greatest scores from our professional/expert judges and that were deemed to have the best website from a technical standpoint.

### **1.3.08 Website Content**

The Website Content award is presented to the three teams that received the greatest scores from our professional/expert judges and that were deemed to have the best written content on their website.

### **1.3.09 Tutorial**

The Tutorial recognition is presented to the team that was deemed to have the best explanation of the task selected. This winner is selected by the CRC Robotics Organizing Committee.

### **1.3.10 Never Say Die**

The Never Say Die recognition is presented to the team that encountered many obstacles throughout the course of the Competition and that persevered to finally overcome those hurdles despite all hurdles. This winner is selected by the CRC Robotics Organizing Committee and receives a trophy that symbolizes all their hard work and perseverance.

### **1.3.11 Sportsmanship**

The Sportsmanship recognition is presented to the three teams that are deemed the most respectful towards their peers and exhibit behavior based on values of respect and integrity that go beyond the Competition's rules and etiquette. The winning teams are selected by their peers and the team in first place also receives a trophy that symbolizes their sportsmanlike conduct: The Founders' Trophy.

## **1.4 Overall Ranking**

### **1.4.01 Scoring Logic**

1. For each component of the Competition, the number of points equal to the total number of teams is given to a first-place ranking. The score given to other ranks can be calculated using the following formula:

$$\text{Score} = \text{Total Number of Teams} - \text{Rank} + 1$$

2. Kiosk, Programming, Robot Design, Robot Construction, Website Design, Website Content, and Video components follow the formula mentioned above.
3. The game component counts for double the value of the formula mentioned above.
4. In the case of a tie, the teams receive the same score for that category.
5. The total number of points for all components determines the overall ranking.

### **1.4.02 Overall Ranking Award**

The Overall Ranking award is presented to the three teams that receive the greatest score after combining the points in each component. They are deemed to be the best performing teams in the Competition as a whole. The team in first place also receives a trophy that symbolizes their success.