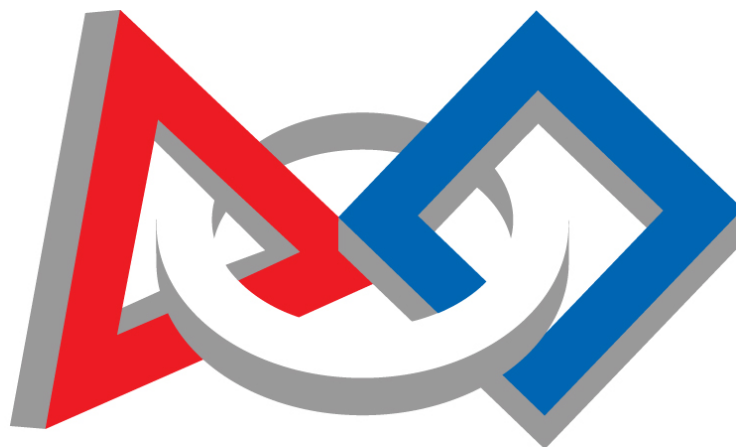




*For Inspiration and Recognition of  
Science and Technology*

[www.firstroboticscanada.org](http://www.firstroboticscanada.org)



***FIRST***®

CANADA

# Best Practices in preparing for judging at FRC Ontario District Events

*FOR INSPIRATION AND RECOGNITION OF SCIENCE AND TECHNOLOGY*



# Here come the judges.....



1 2 3 4 5 6 7 8 9 10

- No full proof formula
- These are suggestions
- Tips to consider



*For Inspiration and Recognition of  
Science and Technology*

[www.firstroboticscanada.org](http://www.firstroboticscanada.org)

# Who are the judges

- Volunteers
- Sponsors
- Alumni
- Parents
- Interested individuals





*For Inspiration and Recognition of  
Science and Technology*

[www.firstroboticscanada.org](http://www.firstroboticscanada.org)

# What is the role of a judge....

- . *FIRST* Ambassador
- . Role Model
- . Detective
- . Reporter





*For Inspiration and Recognition of  
Science and Technology*

[www.firstroboticscanada.org](http://www.firstroboticscanada.org)

## Things to remember....

- District events are less time than Regionals so the judging schedule is more compact
- Time with judges is brief!
- Important to relay the most important information about your team





*For Inspiration and Recognition of  
Science and Technology*

[www.firstroboticscanada.org](http://www.firstroboticscanada.org)

## The awards:

### Robot Focused

- Industrial Design
- Quality
- Engineering Excellence
- Innovation in Control
- Creativity







*For Inspiration and Recognition of  
Science and Technology*

[www.firstroboticscanada.org](http://www.firstroboticscanada.org)

- > Team Focused
  - Team Spirit
  - Imagery
  - Gracious Professionalism
  - Rookie All Star (interview at District Champs)
  - Rookie Inspiration
  - Engineering Inspiration
  - Judges Award







*For Inspiration and Recognition of  
Science and Technology*

[www.firstroboticscanada.org](http://www.firstroboticscanada.org)

## Awards with a twist

All of these awards require a submission prior to the event. Check <https://www.firstinspires.org/robotics/frc/awards> for more information and deadlines. If you do not submit you will not be eligible for these awards

- Chairman's Award
- *FIRST* Dean's List
- Entrepreneurship Award

Note: the Woodie Flowers Award also requires a submission and is judged by a different group of people.





*For Inspiration and Recognition of  
Science and Technology*

[www.firstroboticscanada.org](http://www.firstroboticscanada.org)

## Suggestions for preparing....

- Read the criteria
- Pick one or two awards that you believe your team meets the criteria
- Tailor your answers to highlight events/successes that suit those awards



# Example - Imagery Award

## Description

- In honor of Jack Kamen, Dean's father, for his dedication to art and illustration and his devotion to *FIRST*. This award celebrates attractiveness in engineering and outstanding visual aesthetic integration of machine and team appearance.

## Guidelines

- Appearance of machine and team are **integrated in an attractive theme**.
- Visuals of the integrated team/machine are exceptional.
- The team theme is supportive of the principles of *FIRST*.
- The team's theme is **original**, can **be explained by a team spokesperson**, and is fitting to the objectives, character, and/or history of the team.

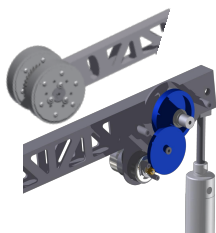
## One pager about robot

- ❖ Compile a one-page, **concise**, handout that you can give to the judges to highlight specific things that the team wants the judges to know about the design, creativity and engineering of their robot.
- ❖ The sheet is targeted to highlight particular strengths and/or unique features of the robot to make the short time they have with the judges more productive.

**TEAM 1114 PRESENTS**  
**SIMBOT SS – SIMPLICITY IN DESIGN**

**ROLLER CLAW**

During the design process it was decided that having a fast and reliable pickup was a priority. Pinch claws typically require precise positioning to be effective. As such a roller claw was chosen. The roller allows the ball to be secured as soon as contact is made, thereby reducing the amount of accuracy needed. This allows us to pickup from various angles, and/or while being defended.



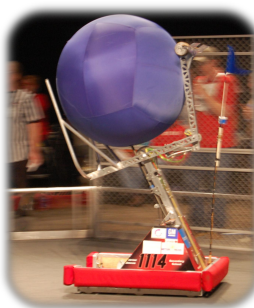
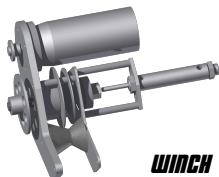
**ARM**

A key to this year's game is the ability to navigate through tight spaces. As such we chose an arm that barely extends past our robot's footprint. The overall arm design is seamlessly integrated with our launcher allowing for hurdling to be done in a smooth elegant motion. A stationary aluminum bar with lexan flaps, mounted at the end of the arm, is used for quick and consistent removal of balls from the overpass.



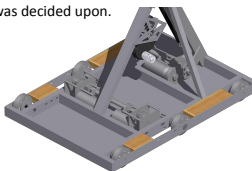
**WINCH**

In order to have a linear punch launcher powered simply with surgical tubing, a winch was needed to retract the punch and stretch the tubing. The winch is powered by an off-the-shelf drill transmission which does not backdrive, thereby holding it's position even when unpowered! A simple cylinder disengages a dog gear allowing the winch to free spin and release the punch.



**DRIVETRAIN**

The drivetrain is the single most important subsystem of every FIRST robot. A simple design six wheel was chosen over more complicated steering concepts to allow our drivers more practice and programmers more opportunities to work on hybrid mode. The open layout allows easy access for maintenance. Despite the need for speed in this year's game, due to potential congestion on the field, added strength was desirable for certain "pushing" situations. Thus, a two speed drivetrain was decided upon.



**LAUNCHER**

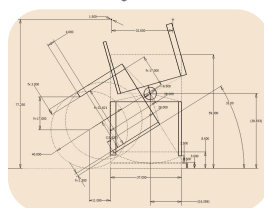
A linear punch was chosen for our launcher as it elegantly fits into the framework of our arm and claw, maintains the desired level of simplicity and provides a powerful and effective means of hurdling. Surgical tubing was chosen to power the launcher to eliminate use of additional motors.



**OVERALL DESIGN**

Simbot SS was designed with simplicity as the number one priority. A simple design is less likely to fail, and is easily constructed allowing for more time to tweak and practice.

In order to ensure a simple design, a considerable amount of time was spent laying the robot out in CAD, to find an arrangement that allowed for effective launch, pickup and starting positions, while still maintaining a single joint and ensuring the robot never exceeded the height of the overpass. This allowed for a simple mechanism that allows us to hurdle without having to stop to re-orient the arm.



A number of teams are doing this now but here is an example from Team 1114's website. It highlights features from their 2008 robot that they wanted the judges to remember. It can be found here: <http://www.simbotics.org/first/2008>

# Suggestions

- ☐ Practice for pit interviews not just scheduled interviews (ie. Chairmans, Dean's List)
- ☐ Choose the materials you present carefully
- ☐ Students talk to judges
- ☐ Keep spokespeople in the pit (especially at Champs)
- ☐ Clear, concise information
- ☐ Be memorable
- ☐ Be careful of Acronyms and local terms – not all judges know what TDSB stands for or a “superhub”. This becomes particularly important if you go to World Champs.





*For Inspiration and Recognition of  
Science and Technology*

[www.firstroboticscanada.org](http://www.firstroboticscanada.org)

# Questions?

