



# Judge Training

**FLL**  
FIRST LEGO League

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## Welcome and Thank You!

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- Thank you for agreeing to serve as a judge for a **FIRST LEGO League** event!
- You were asked to serve as an FLL Judge because we believe that your professional accomplishments make you an ideal role model for the students – as well as the engineers and other professionals – participating in the program
- In other words, you are a hero, and we are delighted that you could find the time in your busy schedule to assist us in reaching our mission!



## FLL Judge Training

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- Intro to **FIRST** and FLL
  - What is FLL?
  - Gracious Professionalism®
  - FLL Core Values
- Types of Judging
  - Teamwork
  - Robot Design
  - Project
- What is an FLL Tournament?
  - Judging Process
  - Team Evaluation
  - Awards Deliberations
- Preparing to Judge
  - What to Expect
  - What Information You Need to Know



## FLL Judge Training

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### Introduction to **FIRST** and **FIRST LEGO League**



## What is FLL?

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International program created through a partnership between **FIRST** and The LEGO Group

- INSPIRES** children, ages 9 to 14, to participate in science and technology
- ENGAGES** kids in playful and meaningful learning
- PROVIDES** a fun, creative, hands-on learning experience
- CHALLENGES** kids to solve real-world problems using robotics
- TEACHES** children to experiment and overcome obstacles
- BUILDS** self-esteem and confidence

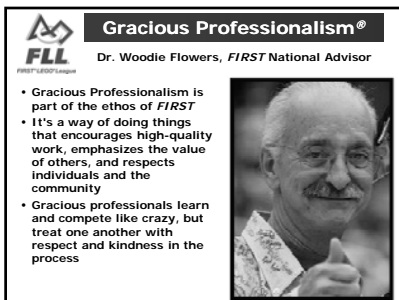



## FLL Philosophy

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- Everyone is a winner
- **FIRST LEGO League** is designed to be a celebration of achievement
- Judges learn from participants
- Mentors learn from teams
- Students leave wanting more
- It's not about building robots; it's about robots building people



## Gracious Professionalism®

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Dr. Woodie Flowers, **FIRST** National Advisor



- Gracious Professionalism is part of the ethos of **FIRST**
- It's a way of doing things that encourages high-quality work, emphasizes the value of others, and respects individuals and the community
- Gracious professionals learn and compete like crazy, but treat one another with respect and kindness in the process



## FLL Core Values

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- We are a team.*
- We do the work to find solutions with guidance from our coaches and mentors.*
- We honor the spirit of friendly competition.*
- What we discover is more important than what we win.*
- We share our experiences with others.*
- We display Gracious Professionalism in everything we do.*
- We have fun.*





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### What is an FLL Tournament?

**The Challenge**  
Every Year Brings a New Challenge

**Robot Game**  
re-design, build, test, and program autonomous robots that must perform a series of tasks, or missions

**The Project**  
conduct research and create an innovative solution to an aspect of the Challenge and present that solution

**The Season**

- Working in teams of up to 10 kids and guided by at least one adult coach, team members have about 8 weeks to:
  - Build an autonomous robot that will, in 2 minutes and 30 seconds, complete pre-designed missions
  - Analyze, research, and invent a solution for a given assignment, and present it to their community

**FLL Competition**  
All Categories Receive Equal Emphasis

Robot Performance	Robot Design
FLL Core Values	
Project	Teamwork

All teams should also observe FLL Core Values while competing in the 4 parts of an FLL Competition, and throughout their season

**FLL Competition**  
All Categories Receive Equal Emphasis

Judged by teamwork judges working in the robot design interviews, asking teamwork-specific questions in all phases of the competition

- Your tournament organizer will tell you what method he/she will use to judge teamwork at your event

**Teamwork**

**FLL Competition**  
All Categories Receive Equal Emphasis

**Project**

- 5 minutes for the project presentation
  - Includes setup time
- Followed by a question and answer period
- May perform a skit, a PowerPoint presentation, songs, or choose another creative way to share their project solutions
- Note for A/V tool use- can't simply "plug and play" full presentation

**FLL Competition**  
All Categories Receive Equal Emphasis

**Robot Design**

- Interview with each team to discuss the design and programming of their robot
- Interviews take place in a separate judging area, which should include an FLL Challenge table (or surface with borders) with a field setup kit
- Your tournament organizer will tell you what format your technical interviews will use.

**Project**      **Teamwork**

**FLL Competition**  
All Categories Receive Equal Emphasis

Robot Performance	Robot Design
FLL Core Values	
Project	Teamwork

- Score based
- Officiated by referees
  - Using rules and guidelines for the Challenge
- Your tournament organizer will tell you the criteria for excellence in Robot Performance

**FLL Competition**  
All Categories Receive Equal Emphasis

Robot Performance	Robot Design
FLL Core Values	
Project	Teamwork

A complete picture of how well a team understands FLL Core Values comes from input from all judges and other tournament personnel, such as referees

**Competition Philosophy**  
Teams Have a Chance to Compete and Show What They've Learned

- A celebration of the teams' accomplishments during the season
- The Tournament is about giving children a unique and stimulating experience
- Learn the value of teamwork
- Bring the FLL Core Values they learn back to their communities
- Everyone has fun!

### Celebration & Showcase

- Treat their accomplishments and their work with respect
- One negative comment from a Judge can have a devastating effect on teams
- Make it your goal as a judge to ensure that the teams:
  - know what they did well
  - have a positive experience showcasing their achievements

*"We go where there is a reward. They are where there is a reward. We are where there is a reward."* - Big Dipper

### FLL Judge Training

#### Preparing to Judge

*"The presenting kit isn't that big of a deal. The judging process is."* - Douglas D. Davidson

### What to Expect

- Some children are talkative, while others are very shy
- You may have to ask more questions of some teams to arrive at the same information that another team gives you voluntarily
- Be prepared to re-word your questions if you find that the children are struggling to understand or answer
- Try not to ask questions that allow the teams to answer with a yes or no, and encourage the teams to elaborate on their answers.
- Have age-appropriate expectations

### Asking Questions

- Ask leading/probing questions to stimulate thought process
  - "What do you think would have happened if you had done...?"
  - "What was the hardest part of...?"
  - "Why do you think your design is the best approach to accomplish the missions?"
- Engage a distracted, detached, or "fiddly" child by name and calmly ask about their area of expertise on the team
  - "what did you contribute" or "how does this work" questions let them demonstrate their positive contributions to the team
- Ask direct questions that include only one thought at a time

*"It is better to have some of the questions that start the process, to start thinking."*

### Judge Responsibilities

#### Know Them – They Change With Time!

<b>Prior to the Event</b> <ul style="list-style-type: none"> <li>Familiarize yourself with:                     <ul style="list-style-type: none"> <li>FLL Mission and Core Values</li> <li>Event schedule</li> <li>Challenge materials as appropriate</li> <li>Judging procedures</li> <li>Rubrics</li> <li>Awards</li> </ul> </li> </ul>	<b>During Team Judgments</b> <ul style="list-style-type: none"> <li>Interview teams</li> <li>Make sure judging sessions stay on schedule</li> <li>Evaluate each team according to the rubric criteria</li> <li>Note and report demonstrations of Gracious Professionalism &amp; FLL Core Values</li> </ul>	<b>During Judgments</b> <ul style="list-style-type: none"> <li>Determine the top ranked teams for your judging category</li> <li>Work with judges of other categories to determine the qualifying teams</li> <li>Show your notes on entering teams with the Judge Indicator for use in the Awards Ceremony script</li> </ul>	<b>During the Awards Ceremony</b> <ul style="list-style-type: none"> <li>Attend the Awards Ceremony (if possible)</li> </ul>
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### Before the Tournament

#### Preparing for Judging

- Review the following information prior to the event:
  - The Challenge description
  - Q&A
  - Tournament schedule
  - Award descriptions and criteria
  - Rubrics (evaluation criteria)
- Robot Design Judges – Challenge missions and rules
- Project Judges – Challenge Project assignment
- Teamwork Judges – FLL Core Values
- All Judges:
  - Attend Judges meeting before event

### Types of Judging

- Teamwork Judging
- Robot Design Judging
- Project Judging

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#### Teamwork Judging

*"It is not the individual who judges but the individual who is judged."* - Robert Bly

### Teamwork

#### Judging Criteria

- Roles and Responsibilities
- Gracious Professionalism
- Problem Solving and Team Dynamics
- Confidence and Enthusiasm
- FLL Core Values

*"Cooperation is a matter of being an attitude of regard toward the person – not a skill."* - Dale Carnegie


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### Teamwork

#### Judging Teamwork

Teamwork specific questions asked by teamwork judges in Robot Design interview rooms

- Questions on teamwork in all phases of the competition may be asked during interview session



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### Teamwork

#### Additional Information

- It's OK for a team to have a strong leader
  - He/she should work to include other team members
- Some teams will have clearly defined roles, some will not
- All children should be able to tell about their role on the team and how they contributed
- Problem solving – get specific

"Give me an example from your season when your team had to decide between two ideas, and tell me how you decided?"

"How did you decide which team members did which jobs?"



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#### Robot Design Judging





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### Robot Design

#### Judging Criteria

- Innovative Design
- Strategy, Design Process, Problem Solving
- Locomotion and Navigation
- Programming
- Children Did the Work
- Structural
- Overall Design

"Innovation is a great profession. There is no satisfaction in working a job until the imagination strikes through the wall of routine. The more you think, the more you know. There is no such thing as a free lunch. There is no such thing as a free ride. There is no such thing as a free lunch. There is no such thing as a free ride. There is no such thing as a free lunch. There is no such thing as a free ride." - Herbert Hoover






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### Robot Design

#### Additional Information

- Discussion format
- Teams have time to interact with judges to demonstrate:
  - Design process, choices, and final robot design
  - Programming
  - Competition strategies
- Technical knowledge, including robot design, programming and efficiency are all judged

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### Robot Design

#### Additional Information


- Items on rubric that state "If used" do not count against a team if they are "Not used"
- Look for innovation in all aspects of the robot:
  - mechanical design
  - attachments
  - game strategy
  - programming
- Make sure overall design is high quality – innovation should be relevant

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#### Body Forward

#### Robot Game Missions



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### Robot Game Missions

Descriptions and rules for all missions are available on the web at [www.firstlegoleague.org](http://www.firstlegoleague.org)

Click to go direct to Robot Game page where missions can be found



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### FLL Judge Training

#### Project Judging



### Project Judging Criteria

- Quality of the Research
- Degree of Innovation in the Project Solution
- Creativity of the Presentation
- Assessment of How the Project was Shared and the Impact of the Sharing

### Where to Get The Project Via Internet

<http://www.firstlegoleague.org/media/twocol.aspx?id=247>

### Project – Part 1 Identify a Problem

- Pick one:
  - body part
  - function
  - like hearing or breathing
  - system
  - like circulation with the heart, veins, arteries, capillaries, and blood all working together
- Learn more about it!
- Choose one of the problems associated with the body part, function or system

### Project – Part 2 Create an Innovative Solution

- Suggest a solution
  - A new idea
  - An improvement on something already being done
- What is being done to fix the problem?
- What could be done?
- What will it take to make your team's solution happen?
- How will your solution help people live happier and healthier lives?
- Decide where your solution fits:
  - Body—Repaired
  - Body—Healed
  - Body—Improved
- And remember, the most important thing is to have fun.

### Project – Part 3 Share With Others

- Explain the problem you researched
- Describe exactly how your solution can help
- Choose how to share what you've learned
  - Give a talk for parents
  - Create a website
  - Perform a skit
  - Make a comic book
  - Rap, poem, song, or story
  - Create a poster
  - Pass out flyers
- Present your research and solution to lawmakers, doctors, engineers, or groups who already help with your problem

### Project Awards Eligibility

To be eligible for Project awards a team must have a live presentation that:

- Describes their body part, function, or system, the problem, and their innovative solution
- Identifies at least one scientist, engineer, or doctor who is working on the problem and tells about them
- Shows that the team did the research and tells about the books, magazines, websites, reports, and other resources they used to learn about the problem and those working on it
- Tells how they shared their research findings with others

### FLL Judge Training Judging Process Overview

### Judging Process

Done by groups of judges assigned to review groups of teams (2 project judges, 2 robot design judges, and 2 teamwork judges)

Done by groups of judges assigned to review each award (all project judges together, all teamwork judges together, etc)

Done by all judges together

### Judging Process

Team Evaluation and Feedback

Awards Deliberations

During Team Evaluation and Feedback, the focus of the judges is on evaluating each team and providing them with constructive feedback

During Awards Deliberations, the focus of the judges is on determining the teams worthy of awards and recognition

**Judging Process**



- Team Evaluation and Feedback
- Awards Deliberations

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**Team Evaluation and Feedback**

**Overview**

**Tips from a Veteran Judge**

**How to Start Smoothly**

"Determine a plan of action for your judge group before you begin judging"

"Determine how to divide or share responsibilities such as score input, timekeeping, questions to ask"

Examples:

- Do you want to see a few teams before you start to complete their evaluation sheets?
- Does each judge concentrate on specific rubric items?

**Judging Sessions**

**Starting Each Judging Session**



- Judge groups meet with assigned teams according to schedule
- Greet them, break the ice to de-stress, give them a (very quick) outline of the process
- Interact with children as much as you can!
- Ask questions – samples are included in your Judging Manual


"Hi, welcome to your Project Judging session. If you have any handouts, we'll take those now. Start your presentation whenever you are ready, and we'll ask you some questions when you finish. Remember that you have 5 minutes"



Do everything you can to put each team at ease and encourage a fun experience!



**Judging Sessions**

**Evaluate Each Team and Provide Feedback**



- Each judge group evaluates teams using the rubric
- Provide constructive feedback

"We were impressed with the effectiveness of your program to deploy the satellite. It would have been nice to see those same programming principles applied to improve the efficiency of your other programs"

**Judging Sessions**

**Use Specifics When Taking Notes**




- Be as specific as possible when:
  - gathering information
  - taking notes
  - discussing teams
- Pay attention to detail
  - Especially helpful for decision making for awards
  - Specific comments more helpful than overall impressions
  - Detailed reasons concerning a team's suitability for an award are extremely important!

The teams deserve a level of effort from the judges commensurate with what they have put in over the course of a season



**Constructive Comments**

**Examples**



General	Example Teamwork Comments
Effective leadership/problem solving/troubleshooting	Understand contributions of all members
Resourceful	Treaty respect each other
Keen observers	Demonstrate great partnership
Applied what you learned	Great division of roles – Effective use of each other's strengths
You should be proud of your accomplishments and yourselves	Excellent relational skills
Wonderfully focused	Great persistence of Gracious
Determined	Professionalism
Accomplished well beyond your years	Encouraged each other
Think "out of the box"	Pulled for the team
	Worked well under pressure
Example Robot Design Comments	Example Project Comments
Good grasp of mechanical concepts	In-depth research
Solid understanding of programming logic	Solid analysis
Creative or effective strategy	Creative and relevant presentation
Good understanding of K150 principle	Good organization
Innovative	Genuinely understand subject matter
	Innovative and resourceful
	Very creative approach/presentation
	Enjoyable presentation

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**Awards Deliberations**



**Awards Deliberations**

**FLL Awards**



- Judges choose teams that have achieved at a high level to receive awards
- FLL awards policy dictates that no one team receive more than one award
  - Exception: A team may win two awards if one of them is for Robot Performance
- The Awards Deliberations process is a way for judges to "normalize" team evaluations and compare teams
- All award winners should exhibit GP and demonstrate CV at the tournament and throughout the season
  - Lack thereof is grounds for DISQUALIFICATION for any award

### Awards Considerations

- With the exception of Champion's Award, teams may win any award even if they don't compete in all categories
- However, teams must participate in all aspects to advance to Championship
- Only eligible for awards and advancement at first Qualifier a team attends

### FLL Judge Training

#### Initial Ranking and Deliberations Process

### Initial Rankings

#### Step #1 – Judges Rank All Teams

- Judges discuss and rank teams who presented in their interview rooms from "best" (1) to "needs most improvement" (last).
- Complete one "Summary Sheet" to take to awards deliberation. Be sure to add any notes that can help in explaining each team's presentation.
- See sample "Summary Sheet" in Judges Manual.

### Awards Deliberation

#### Step #2 – Deliberation with All Judges in the Same Category

- All Project Judges meet.
- All Robot Design Judges meet.
- All Teamwork Judges meet.
- Judges exchange information and deliberate as to the best teams that they evaluated.
- Rank the top performers in your award category and list down the top 4 on the "Awards List"
- See sample "Awards List" in Judges Manual.

### Top Qualifiers Deliberation

#### Step #3 – Deliberation to Determine Teams Qualifying for the State Tournament

- List all teams by number.
- Use Judges rankings in Initial Rankings (step #1) Summary Sheet, to assign a numerical value for each team in each category.
- Top teams in each interview room receives a "1", the next highest ranked teams receives a "2", etc.
- For Robot Performance, Top two scoring teams receive a "1", 3<sup>rd</sup> and 4<sup>th</sup> place team receive a "2", etc.
- Add scores of all categories to get an overall score. The team with the lowest score, will be the highest ranking team. The team with the next lowest score will be the second highest qualifier, etc.
- Judge Advisor will work with judges to confirm or deny qualifiers and close scores.
- See "Qualifying List" in Judges Manual

### FLL Judge Training

#### Final Awards Deliberations Process

### Final Deliberations

#### When Teams are Considered for Multiple Awards

- Often, a team may be in consideration for multiple awards
- A team should receive the award in the category which they were ranked highest
- If a team achieves its highest ranking in more than one category, a determination must be made as to the most appropriate award to give that team
- Champion's, Teamwork, Robot Design, and Project, and any breakouts of these awards, are given priority in cases where a team is ranked equally high for more than one award
- Several scenarios are presented on the next slide to help illustrate the decisions that may be required at this stage to reward teams appropriately

### Deliberations Examples

	Scenario 1	Scenario 2	Scenario 3
Project Ranking	2	1	1
Robot Design Ranking	1	2	1
Team Spirit Ranking	2	1	2
Appropriate Award	Robot Design	Project	It depends
Why?	Team was ranked first in this category, and it is also this team's highest ranking	Project is a Core Award for FLL Championships, and is therefore considered a higher honor.	Project and Robot Design Judges (at a minimum) should discuss this team's performance and determine which of the two awards is most appropriate for this team.

Each scenario represents one team's rankings for the three awards listed. Since this team is in consideration for multiple awards, a choice must be made as to the most appropriate award for that team.

### Use FLL Supplied Score Sheets

#### Standard Project Rubric

- Use only the FLL-supplied rubrics as score sheets
- Rubrics are designed specifically for the way FLL Judging is performed
- Rubrics are the basis for constructive feedback.

**Provide Rubric-based Feedback to All Teams Standard**

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Team Member  
Event Number

**Project Rubric**

Criteria	1 (Poor)	2 (Fair)	3 (Good)	4 (Excellent)
1. The team's project is clearly defined and described in the project description.	The project description is very vague and does not clearly define the project.	The project description is somewhat clear but lacks detail.	The project description is clear and provides some detail.	The project description is very clear, detailed, and easy to understand.
2. The team's project is a solution to a real-world problem.	The project is not a solution to a real-world problem.	The project is a solution to a real-world problem but is not clearly defined.	The project is a solution to a real-world problem and is clearly defined.	The project is a solution to a real-world problem and is very clearly defined.
3. The team's project is a solution to a problem that is important to the community.	The project is not a solution to a problem that is important to the community.	The project is a solution to a problem that is important to the community but is not clearly defined.	The project is a solution to a problem that is important to the community and is clearly defined.	The project is a solution to a problem that is important to the community and is very clearly defined.
4. The team's project is a solution to a problem that is important to the world.	The project is not a solution to a problem that is important to the world.	The project is a solution to a problem that is important to the world but is not clearly defined.	The project is a solution to a problem that is important to the world and is clearly defined.	The project is a solution to a problem that is important to the world and is very clearly defined.
5. The team's project is a solution to a problem that is important to the future.	The project is not a solution to a problem that is important to the future.	The project is a solution to a problem that is important to the future but is not clearly defined.	The project is a solution to a problem that is important to the future and is clearly defined.	The project is a solution to a problem that is important to the future and is very clearly defined.

Additional detailed comments from judges encouraged

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**Questions?**



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*"We can do no great things, only small things with great heart."*  
Mother Theresa

**Judge Training COMPLETE!**

**Thank You for your Time, Energy and Service!**



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*"We can do no great things, only small things with great heart."*  
Mother Theresa