



# What is FLL?

FLL Judge Training  
Part 1



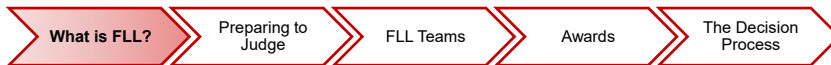
2014

Welcome to FIRST LEGO League Judge training.

# FLL Judge Training



- **Part 1:** What is FLL
- **Part 2:** Preparing to be an FLL Judge
- **Part 3:** Interacting with FLL teams
- **Part 4:** FLL Awards
- **Part 5:** The Decision Making Process



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Part 1: What is FLL?

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Thank you for volunteering to be a FIRST LEGO League Judge!

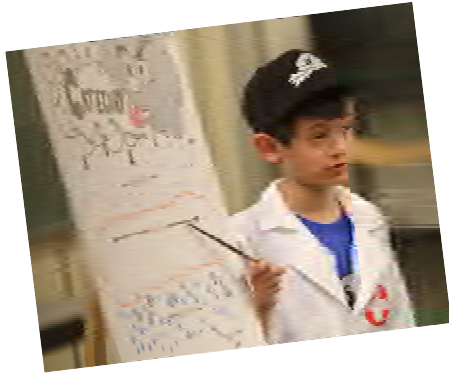
This training consists of five parts, covering the information needed by all FLL judges. Each part is a short video. After watching all the videos, please complete the Certification questions. Finally, be sure to watch the video and complete the Certification questions for your area, whether you'll be a Core Values Judge, a Project Judge, or a Robot Design Judge. If you're judging different areas at different tournaments, you'll just need to do this general judge training once, plus the training for each area you're judging.

The training can be completed in pieces, so feel free to watch videos as your schedule allows. Combining all the parts and the questions, most people will take about an hour to an hour and a half to complete FLL Judge Certification.

## Objective



*After completing this part of the training...*



You will be able to describe *FIRST*<sup>®</sup> and the *FIRST*<sup>®</sup> LEGO<sup>®</sup> League program.

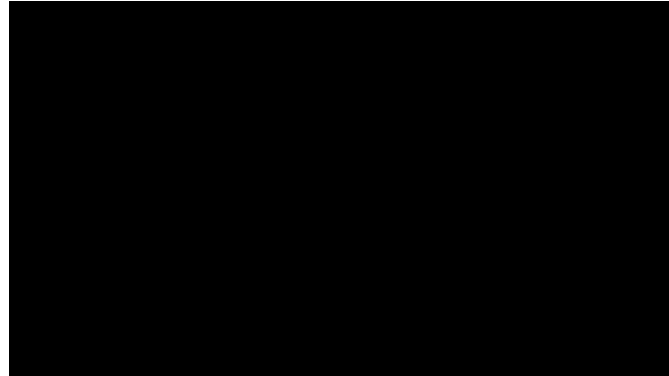
*FIRST*<sup>®</sup> LEGO<sup>®</sup> League Judge Training  
Part 1: What is FLL?

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Let's get started!

This first part is a quick overview of *FIRST* and specifically *FIRST* LEGO League.

# What is *FIRST* LEGO League?



Review the “What is *FIRST* LEGO League” slides  
or watch the [video](#) on YouTube

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Part 1: What is FLL?

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Please review the “What is FIRST LEGO League slides” or watch the video on YouTube.



## ACTIVITY

*Spread the word!*

Tell someone who does not know about *FIRST* why you signed up to volunteer. You might tell them in person, call, email, or post on social media recruiting your friends to join you as a *FIRST* volunteer.

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Part 1: What is FLL?

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Each part of Judge training will include a short activity that will help reinforce the material from that video.

For your first activity, spread the word about FIRST! Tell someone who does not know about FIRST why you signed up to volunteer. You might tell them in person, call, email, or even post on social media recruiting your friends to join you as a FIRST volunteer.

**THANK YOU**

***FLL Volunteers are incomparable!***

**What is FLL?** Preparing to Judge FLL Teams Awards The Decision Process

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Thank you for completing the first part of FLL Judge training!  
Now that you've learned a bit about FIRST and FLL, let's start to focus on your role as a judge. Continue to the second part FLL Judge training.

# Contributors



- Content Development
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# Preparing to be an FLL Judge

FLL Judge Training  
Part 2

2014

What is FLL? **Preparing to Judge** FLL Teams Awards The Decision Process

Welcome to the second part of FLL Judge Training: Preparing to be an FLL Judge.



## Objective



*After completing this part of the training...*



You will be able to identify characteristics of judges and describe the FLL judging process.

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Part 2: Preparing to be an FLL Judge

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In this part of the training, we will describe the roles and characteristics of judges and cover the basics of what to expect during an FLL tournament.

# What to expect as an FLL Judge



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Part 2: Preparing to be an FLL Judge

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As an FLL Judge, you can expect to see kids who are inspired and learning science, technology, engineering, and math. There will be a lot of smiles, everyone having fun, and a lot of noise!

## Two Purposes for Judging



- Teams demonstrate what they have done during the season and receive feedback on their achievement of FLL objectives.
- Judges gain information about the teams to use for awards decisions.

So, why do we have judging in the middle of all the excitement?

Judging in FLL has two separate but related purposes. First, judging gives teams the chance to demonstrate the work they've done during the season and receive evaluation on how well they achieved the FLL objectives. Second, judging provides an organized, ordered, and consistent way for judges to gain information about which teams to recognize and receive awards.

With both purposes for judging in mind, let's continue and discuss the roles you'll fill as a FLL judge.

## Judge Roles



- *FIRST* Ambassador
- Role Model
- Discoverer
- Reporter

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Part 2: Preparing to be an FLL Judge

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FLL Judges have four primary roles: *FIRST* Ambassador, Role Model, Discoverer, and Reporter.

## ***FIRST* Ambassador**



- Ambassador for the *FIRST* mission throughout the competition
- Give encouragement to adults and students
- Gracious professional
- Demonstrate FLL Core Values

As a judge, you serve as an representative and ambassador for the *FIRST* mission throughout the competition. In this role, you should give encouragement to adults, team members and other volunteers. As an ambassador for *FIRST* and as a role model, should always be a gracious professional and demonstrate the FLL Core Values.

# FLL Core Values



- We are a team.
- We do the work to find solutions with guidance from our coaches and mentors.
- We know our coaches and mentors don't have all the answers; we learn together.
- 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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Part 2: Preparing to be an FLL Judge

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The Core Values are the foundation of *FIRST* LEGO League and everyone is expected to demonstrate the Core Values at FLL Events. The Core Values are:

We are a team.

We do the work to find solutions with guidance from our coaches and mentors.

We know our coaches and mentors don't have all the answers; we learn together.

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!**

## Role Model



- Many FLL team members have never met a real “engineer-scientist-professional”
- When time allows, share:
  - Your successful career
  - Real-life experiences
- Focus on the mission of *FIRST*: Get kids excited about science and technology.

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You’re also serving as a role model when you are a FLL Judge. Many team members have never met a real engineer, scientist, or professional in your field. If time allows, consider sharing a little bit about your career and real-life experiences with teams. However, your primary focus is on the mission of FIRST: to get kids excited about science and technology.

## Set a Positive Tone



- Tournaments are FUN
- Show your sense of humor
- Make eye contact
- **Smile**

*"There's no point in being grown up if you can't be childish sometimes."*

Doctor Who



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As a role model, you'll want to set a positive tone. FLL tournaments should be FUN for everyone. You can show your sense of humor when appropriate. Help kids feel welcome by making eye contact and smiling.



## Discoverer



- Evaluate the teams using the FLL rubrics
- Recognize the teams who are the best candidates for awards
  - Sort out the facts within the minimum time with the information available



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Part 2: Preparing to be an FLL Judge

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As a judge, you are responsible for gathering information about FLL teams. You'll use rubrics to evaluate the teams and determine which teams are the best candidates for awards. You will need to sort out the facts with a minimum amount of time, and using the information available.

Active listening and asking thoughtful questions will help you be successful in your role as a discoverer.

## Be Fair



- Judge teams based on their performance
- Use rubrics provided by *FIRST* LEGO League
- Do not rely on personal opinions
- Demonstrate respect and accept others' differences and challenges



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It is especially important for FLL judges to be fair and to evaluate teams based on their performance at the tournament. You will use the rubrics provided by *FIRST* LEGO league, rather than relying on personal opinions. As a judge, you must demonstrate respect and accept others' differences and challenges.

## Conflicts of Interest



Any connection you may have to a team should be reported to Judge Advisor

Refrain from commenting and abstain from voting on that team



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In order to remain fair, it is important to report any potential conflicts of interest to the Judge Advisor. A conflict of interest occurs when you have a specific connection or familiarity with a team, such as being related to a team member. If you do have a conflict of interest, you will need to refrain from commenting on that team and abstain from any votes that have to do with the team.

## Reporter



- Provide meaningful feedback to teams
- Participate in the deliberations process
- Write the script that explains why a particular team was recognized for the award

Your final role as a judge is to be a reporter. In this role, you'll provide meaningful feedback to teams using rubrics. You'll need to be prepared to share information about each team as you participate in the deliberations process. Note concrete examples that support the feedback given to teams and their consideration for awards. You may also be asked to write a script that explains why a particular team was recognized for an award. These scripts are read to the audience when the award is given during the awards ceremony.

## Job #1



Make it your goal to:

- Ensure that the teams have a positive experience
- Treat team accomplishments with respect



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Part 2: Preparing to be an FLL Judge

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Within each of these four roles, your primary goal is to recognize and respect team accomplishments and ensure that teams have a positive experience.

## Preparing to Judge



*"In preparing for battle I have always found that plans are useless, but planning is indispensable."*  
Dwight D. Eisenhower



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Part 2: Preparing to be an FLL Judge

Now that we've reviewed the role of an FLL Judge, let's continue with judge preparation and find out what to expect during an FLL tournament.

# Before Tournament



Complete Judge Training.

Review:

- Mission
- Core Values
- Season Specific Challenge Information
- Tournament Logistics
- Rubrics
- Judging Prep Packs
- Awards List and Description



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Part 2: Preparing to be an FLL Judge

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You're completing the first step right now! Before the tournament, review the mission, core values, Season challenge information, some tournament logistics, rubrics, the prep packs, and the awards. Many regions will provide supplemental information to this training with local tournament details. Some regions may also require a local judge training.

# Typical Tournament Schedule



When	What
Early Morning	<ul style="list-style-type: none"><li>Judge briefing</li><li>Judge breakfast</li></ul>
Morning	<ul style="list-style-type: none"><li>Team judging</li><li>Practice robot round</li><li>Opening Ceremony</li></ul>
Lunch	<ul style="list-style-type: none"><li>Finalize rubric feedback</li><li>Complete room ranking</li><li>Nominate teams for Awards</li></ul>

When	What
Afternoon: Round 1	<ul style="list-style-type: none"><li>Award rankings begin</li><li>Identify Champion's Award candidates</li></ul>
Round 2	<ul style="list-style-type: none"><li>Award rankings continue</li><li>Call Backs or team visits/observations</li></ul>
Round 3	<ul style="list-style-type: none"><li>Final Deliberations</li><li>Begin Award scripts</li></ul>
Awards and Closing Ceremony	<ul style="list-style-type: none"><li>Judges to participate in "High Fives"</li><li>All attend</li></ul>

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Here's what a typical schedule looks like for Judges at an FLL tournament. Since every tournament is different, be sure you get the schedule for your tournament. It will include the specific time to arrive and other important details.

At most tournaments, judges arrive early in the day. Robot Game rounds may be mixed in with judging sessions, or the tournament may have a "block" schedule with all the judging sessions occurring early in the day, before the Robot Game. Judges are usually asked to attend the Opening Ceremony, which may take place first thing in the morning or later, just before the official Robot Game rounds begin. After all the judging sessions, the judges gather and deliberate to determine which teams receive awards. Finally, Judges attend the Closing Ceremony, join a high-five line, and often assist with handing out awards to teams.

This part of judge training provides an overview of the tournament day. The next parts of the training go into more detail about the judging process.



# Tournament Day



- Meet with Judge Advisor to review
  - Event schedule
  - Judging procedures and deliverables
  - Emergency procedures
  - Last-minute items
- Meet the other judges and your judging partner(s)
- Attend the Opening and Closing Ceremonies



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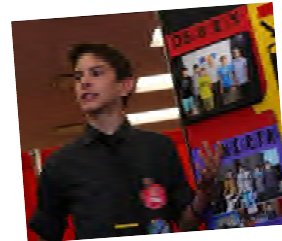
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On the day of the tournament, you'll meet with a Judge Advisor to review the event schedule, judging procedures and what needs to be completed when, emergency procedures, and any other last minute items. You'll meet other judges and your judging partners. Be ready to attend Opening and Closing Ceremonies at your tournament.

# Tournament Day



- Interview teams
- Stay on schedule
- Evaluate teams according to rubric criteria
  - Only consider information from the tournament day
- Write comments for each team



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During judging sessions, you will interview about 12 teams, in sessions that are at least 10 minutes long with each team. Be sure to stay on schedule and evaluate teams according to the rubric criteria. Remember, you should only consider information from the tournament day. After each team, you'll want to write as many comments as possible right away to give the teams the best feedback you can. If you run out of time between judging sessions, you can fill in any missing comments during breaks or at the end of the day. Make sure to take detailed notes!

# Rubric



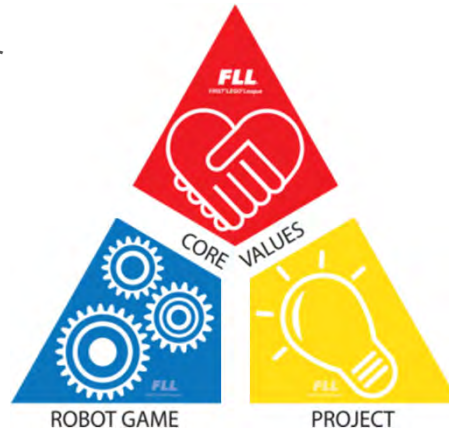
- Criteria and levels of fulfillment for evaluation
- Expectations for learning and the behaviors teams demonstrate
- Standardized evaluation with specified criteria

FLL Robot Design		Team Number	
Robot Design		Judging Room	
<p><b>Directions:</b> For each skill area, check the box that best describes the team's accomplishment. Write notes and demonstrate skill in particular areas where you are "1" or the first box for that demonstrated skill. Please provide as many written comments as you can to acknowledge each team's hard work and to help teams improve. When you have completed the evaluation, please circle the number for which you would like this team to be considered.</p>			
	Beginning	Developing	Accomplished
	1	2	3
	4	5	6
	7	8	9
	10	11	12
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	928		

## Judged Components



Look for separate training modules for each area.



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Part 2: Preparing to be an FLL Judge

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After completing this general judge training, review the training for the area you'll be judging. The area trainings have much more detailed information about what to expect, awards, and how to complete the rubrics.

## Tournament Day



- Note constructive comments
- Keep additional notes of team specifics if needed
- Note and report:
  - Adult intervention
  - Demonstrations of Gracious Professionalism<sup>®</sup> and Core Values
- ***Always give teams the benefit of the doubt***

During the day, in addition to making comments on the rubrics, you may want to keep additional notes about each team. Beyond details about their team t-shirts, project topics, or cool robot designs, note and report any observations of adult intervention, and positive or negative demonstrations of Gracious professionalism and Core Values. If you're not sure what you're seeing or don't have enough information, always give teams the benefit of the doubt.

## Deliberations



- Submit award nominations and ranking forms
- Determine award candidates
- Determine the Champion's Awards
- Determine remaining awards
- Prepare award scripts



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Once you've seen all the teams, the judging decision making process begins. First, you'll finish your ranking of teams, then submit award nominations and ranking forms. Next, the group of judges will determine award candidates. Using the team rankings, award nominations, and Robot Performance scores, the Champions Award winners will be chosen. Finally, the group will determine the remaining awards and prepare awards scripts. The last part of the FLL Judge training goes into detail about the FLL deliberations process.

## Closing Ceremony



- Distribute medals, awards and other team recognition
- Join the high-five line
- Congratulate all teams
- **HAVE FUN!**



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Part 2: Preparing to be an FLL Judge

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At the end of the day, you'll attend the closing ceremony. You may be asked to distribute medals, trophies, or other recognitions. Be ready to join the high-five line to congratulate all teams. It's time to celebrate with the kids and have fun at the end of the tournament.



## ACTIVITY

*Think of a famous person who would make a good FIRST LEGO League judge.*

- Why would this person be a good judge?
- Would you recommend they be a Core Values, Project, or Robot Design Judge?

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Part 2: Preparing to be an FLL Judge

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Now, take a moment to reflect. Can you think of a famous person who would make a good FIRST LEGO League judge? Why would this person be a good judge? Would you recommend they judge Core Values, Project, or Robot Design?



**THANK YOU**

**FLL Volunteers are awesome!**

What is FLL?   **Preparing to Judge**   FLL Teams   Awards   The Decision Process

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Thank you for completing the second part of FLL Judge training! Now that you know the primary roles of FLL judges and the general outline of what to expect in the tournament day, the next part of the training will focus on how to interact with FLL teams.

# Contributors





- Content Development
  - Kathy Morgan, *FLL Partner Services Manager*
  - Skip Gridley, *FLL Global Judge Advisor*
  - Chris Morgan and Sandy Trissell, *FLL Partners, New Mexico*
- Narration
  - Sarah Stray, *FLL Partner Services Manager*
  - Ashley Sleath, Jr., *FLL & FLL Partner Services Team Coordinator*
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  - Donald McCoy, *FLL World Festival Judge*
- Assessment
  - Michael Fryda, *Science Teacher, Westside High School, Omaha, NE*

12/3/2018


FIRST LEGO League Judge Training  
Part 2: Preparing to be an FLL Judge  
Judge Training

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# Interacting with FLL Teams

FLL Judge Training  
Part 3



2014

1

Welcome to the third part of FLL Judge training: Interacting with FLL Teams

## Objective



*After completing this part of the training...*



You will be able to identify best practices when interacting with youth on FLL teams.

FIRST® LEGO® League Judge Training  
Part 3: Interacting with FLL Teams

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This part of the training will review the best practices for interacting with FLL teams during judging sessions.

## What do Youth Gain from Judging?



- 5 C's of Positive Youth Development
  - Competence
  - Confidence
  - Connection
  - Character
  - Caring



Lerner, R. M., Lerner, J. V., Almerigi, J., Theokas, C., Phelps, E., Gestsdottir, S., et al. (2005). Positive youth development, participation in community youth development programs, and community contributions of fifth grade adolescents: Findings from the first wave of the 4-H study of positive youth development. *Journal of Early Adolescence*, 25, 17–71.

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Part 3: Interacting with FLL Teams

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So what do youth gain from participating in judging?

FIRST LEGO League judging is founded in positive youth development, which includes the 5 C's: competence and skills in the content, confidence in their knowledge and sharing their experiences, connections with their peers and with adult judges, demonstration of character, and caring about their communities.

## What do Youth Gain from Judging?



- Presentation skills
- Culminating experience
- Importance of development and reasoning processes



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Part 3: Interacting with FLL Teams

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In addition to general positive youth development, youth participating in *FIRST* LEGO League judging also get to practice their presentation skills and interacting with adults, which will prepare them for success in high school, college, and their future careers. Youth benefit from the celebration of their work at a tournament as a culminating experience at the end of the FLL season. FLL judging also reinforces that success in science and engineering is not only about performance or earning a particular score. The thought processes, development, and reasoning that go into producing a product are also important.

## Judging Youth



- Smile
- Welcome the team to the judging session
- Be polite and respectful
- Children may be nervous
- Make sure teams feel positive about their performance



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Part 3: Interacting with FLL Teams

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FIRST LEGO League judging can be scary for some children. They may perceive the process to be like a test at school. They may have a lot of pressure to do well from Parents, Coaches, teammates and themselves.

As Judges, one of your roles will be to create an environment where the children have fun and feel comfortable.

You can start the judging session on a positive note by smiling, welcoming the team to the judging session, and introducing yourself. Always be polite and respectful. Remember, judging can be a stressful and nervous experience. To help teams feel comfortable, be ready to get up from the table to welcome teams or to move closer to observe their work. Most importantly, even if a team has struggled, try to make sure they leave the judging session feeling positive about their performance and that you value all they have accomplished.

## Engage Team Members



Questions allow students to demonstrate their contributions to the team

Ask questions to individual students whenever possible



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Part 3: Interacting with FLL Teams

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Whether you're judging Core Values, Project, or Robot Design, you'll want to ask questions to learn more about the team's work. Thoughtful questions will allow students to demonstrate their individual contributions to the team and mastery of their area of expertise. Whenever possible, try to engage all members of the team with questions. For distracted, disinterested, or shy youth, try asking that child a broader question such as "What was your role on the team" or "how does this work?" Teams will appreciate your demonstrated interest in what they are saying. If appropriate within the culture, making and maintaining eye contact is a great way to engage them.



## Ask Simple Leading Questions



“What do you think would have happened if... ?”

“What was the hardest part of... ?”

“Why do you think your design is the best approach?”

*“It is better to know some of the questions than all of the answers.”*  
James Thurber



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Part 3: Interacting with FLL Teams

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The way you ask questions makes a big difference in the answers you receive.

When you're thinking of questions, keep them simple and include only one thought at a time. Word your questions to lead students to provide the information you're looking to get. Try to ask open ended questions that require teams to give more than a yes or no answer. The trainings for each judging area include additional tips for asking questions, and refer to your Judging Prep Pack for a list of samples.

## Listening to Answers



If you do not understand what was said, re-word the question or ask follow-up questions:

*“Please explain what you meant.”*

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Part 3: Interacting with FLL Teams

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When you're asking questions, avoid technical jargon and instead allow the youth to demonstrate their knowledge in your judging area. Children may not understand your question, may misinterpret what you are asking or take a question too literally. If you don't understand their answer, or if the answer doesn't seem connected to the question, ask the child to explain. Be ready to reword the question or ask follow up questions. "Please explain what you meant by..." or "tell us more about..." are great ways to ask for additional information.

## Listening to Answers



When children are overly enthusiastic, and nonverbal cues go unnoticed:

- Thank the overly talkative child for their contribution
- Kindly, yet firmly, let them know you want to hear from the other members of the team now



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Part 3: Interacting with FLL Teams

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As role models, teams will look up to you. They are thrilled to share the work they have completed. Let them go into detail whenever possible and be patient when they don't get right to the point.

During judging presentations or while answering questions, some team members will be overly enthusiastic, have a tendency to talk over their teammates, and may not notice non-verbal cues from team members or judges. To make sure you get to hear from all youth on a team, thank the child for his contribution and kindly, yet firmly, let him know you'd like to hear from another member of the team.

From time to time you may encounter an overinvolved coach. When necessary, please remind coaches that the children need to answer questions. A child may know the answer but is nervous so will look to the coach for the answer. Give the child a minute and try to put them at ease before asking the question again.

## Understanding Differences



All children are unique and special...

- Each has strengths and challenges
- Each handles challenges differently
- Children on FLL teams have a wide variety of social skills and learning abilities

*"Praise the young and they will flourish."*  
Irish Proverb



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Part 3: Interacting with FLL Teams

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Each child is unique and special with different strengths, challenges, social skills, and learning abilities.

# Understanding Differences



- Some differences may be misunderstood
  - Limited social skills does not equal limited knowledge
  - Cultures have different expectations for eye contact
- Be positive and patient



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Part 3: Interacting with FLL Teams

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Some differences may be misinterpreted so be mindful that your initial perception may be off. For example, a child who is quiet or has limited social skills may have extensive knowledge to share. Sometimes, you may notice cultural differences. Keep in mind that some cultures expect eye contact, while others find eye contact to be disrespectful. Always remember to remain positive and patient.

## Understanding Differences



Some youth may...

- Have difficulty generalizing information
- Blurt out inappropriate comment
- Distance themselves physically from team
- Have specific special needs
- Have an intense interest in one area only



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Part 3: Interacting with FLL Teams

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A few particular differences that you may encounter include children with limited social skills, who have difficulty expressing thoughts verbally, who shout out blunt or inappropriate comments or may distance themselves physically from the team. Some of these challenges may be neurological in nature. Differences between a child who **can't** do something as compared to **won't** do something can present in a manner to which you may not be accustomed.

A child may have an intense interest in a specific topic or area. For example, she may not be able to see the big robot picture but may have an extensive knowledge about programming or how the gears work.

## Understanding Differences



Some high aptitude students may get left behind compared to kids who react more quickly

- May take longer to answer questions

Some children may have good rote memory and may appear overly rehearsed or “too prepared”

- Ask questions to find out their true level of understanding

As a judge, you'll need to adjust your expectations! Many children with high abilities may take longer to process and answer questions; many may get left behind compared to a child who reacts more quickly.

When evaluating teams who seem “too rehearsed,” think about how an adult might prepare for a big presentation at work. Some team members may memorize facts and examples. Since teams work for weeks or months to get ready for FLL tournaments, the teams often practice until it's perfect. Seeming very rehearsed is not necessarily an indication of an over-involved adult. If you're not sure of the team's true level of understanding, ask follow up questions for explanation of their thought processes or go into more detail.

**A Common Difference**

# Autism Awareness



Autism is a spectrum of disorders that are characterized by challenges related to:

- Communication
- Social interaction
- Restrictive or repetitive behaviors and interests

**Did you know...?**

- Autism affects 1 in 68 children in the U.S.
- Boys are nearly five times more likely than girls to have autism.
- Autism is the fastest growing serious developmental disability in the U.S.



From Autism Speaks (2013). Leading the Way: Autism-Friendly Youth Organization Guide. [http://www.autismspeaks.org/sites/default/files/autism\\_friendly\\_youth\\_organizations.pdf](http://www.autismspeaks.org/sites/default/files/autism_friendly_youth_organizations.pdf)

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Part 3: Interacting with FLL Teams

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As an FLL Judge, you should be aware that youth on the autism spectrum frequently participate in FIRST LEGO League.

Autism spectrum disorders relate to communication, social interaction, and restrictive or repetitive behaviors and interests.

People with autism may have:

- Difficulty understanding language, gestures or social cues
  - Difficulty participating in back-and-forth conversations or interactions
  - Intense interest in unusual topics or objects and intense concentration on favorite activities
  - Good rote learning and long-term memory skills and desire to adhere to the rules
  - Ability to understand and retain concrete concepts and patterns, often with a strong interest or ability in math and technology
  - Difficulty managing transitions, changes in routine, stress and frustration
- on the more severe end of the spectrum, people with autism may have Limited to no speech or limited to no eye contact



## Autism Awareness



### Tips for Communicating with People with Autism

- Use direct, concrete phrases.
- Instructions should contain no more than two steps.
- Allow extra time for the person to respond.
- Be alert to the possibility of outbursts or unexplained behavior.



From Autism Speaks (2013). Leading the Way: Autism-Friendly Youth Organization Guide.  
[http://www.autismspeaks.org/sites/default/files/autism\\_friendly\\_youth\\_organizations.pdf](http://www.autismspeaks.org/sites/default/files/autism_friendly_youth_organizations.pdf)

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As a judge, be prepared to include kids with many types of special needs, including those who are on the autism spectrum. You may find you need to use direct concrete phrases and break down questions or instructions into fewer steps. Give the child extra time to respond and be aware that youth who have autism sometimes have outbursts or unexplained behavior, which could be directed at judges or even teammates.

Coaches are encouraged to share any team members' special needs with Tournament Directors. You may get instructions in advance from the Judge Advisor on how to accommodate them.





## ACTIVITY

Make a list of the top 5 things you want to remember about kids while you're serving as an FLL judge. Keep the list handy at the tournament.

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Part 3: Interacting with FLL Teams

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That's a lot to remember! Take a few minutes to make a list of the top 5 things you want to keep in mind while interacting with FLL teams. Bring the list with you to the tournament for a reminder.



## ACTIVITY

*Share in your own words:*

- Tell a friend or family member about what kids get out of the FLL judging process.
- What are you looking forward to hearing from teams during FLL judging sessions?

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Part 3: Interacting with FLL Teams

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Now is a great time to share, too. Tell a friend or family member about what kids get out of the FLL judging process. What are you looking forward to hearing or seeing from teams during FLL judging sessions?

*Grazie*  
**FLL Volunteers  
ROCK!**

What is FLL?   Preparing to Judge   **FLL Teams**   Awards   Decision Time

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Thank you for completing the third part of the FLL Judge Training! Now that you're ready to interact with FLL teams, the next part of the training will dive into the FLL Awards.

# Contributors



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- Photography
  - Calum Tsang, *FLL Volunteer*
  - Donald McCoy, *FLL World Festival Judge*
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PART 3: Interacting with FLL Teams  
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**Awards**

FLL Judge Training  
Part 4

2014

What is FLL?   Preparing to Judge   FLL Teams   **Awards**   The Decision Process

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Welcome to the fourth part of FLL Judge Training: Awards.

## Objective



*After completing this part of the training...*



You will be able to describe considerations for each FLL award.

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Part 4: FLL Awards

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This part of the training will describe award eligibility and the considerations for each FLL award.

# FLL Awards



Recognize **achievement**



Align with **FLL mission**

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Part 4: FLL Awards

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Like the overall FLL judging process, FLL awards serve the dual process of recognizing team achievements and encouraging youth to become inspired to pursue science and technology. Each FLL award has been chosen to align with specific desired outcomes of the FLL program.



## Award Eligibility



*In order to be considered for awards, teams must...*

- Match maximum age requirements  
(**16** or younger (**14** in U.S./CAN/MEX))
-  • Have **10** or fewer team members
-  • Participate in **3** judged areas and the Robot Game  
(for Core Awards)
-  • Be at their first official event at each tournament level  
for the season
- All team members participate in each judging session
- Demonstrate FLL Core Values (No red-level behaviors)

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Part 4: FLL Awards

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Before we address the specific awards, let's address what teams need to do to be eligible for awards at official events. Official events include all qualifying tournaments, Championship tournaments, and World Festival.

In order to be considered for awards, teams must:

- Match maximum age requirements, which state that youth must be 16 or younger globally, or 14 or younger in the US, Canada, and Mexico.
- Teams must have 10 or fewer team members. As a judge, as long as 10 or fewer team members attend your judging session, it's reasonable to assume this requirement has been addressed as teams check in. If you suspect a team has more than 10 members, you should notify the Judge Advisor.
- Teams must participate in all three judged areas and the Robot Game to be eligible for Core Awards.
- They must be at their first official event at each tournament level during the season.
- All team members must participate in each judging session – this rule means that teams cannot divide their team to go to judging.
- Finally, every team has to demonstrate Core Values and have no behaviors serious enough to warrant disqualification.

At most tournaments, all teams will be eligible for awards.

## Core Values



Gracious Professionalism® and Core Values must be demonstrated by **everyone at all times**



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By competition time, all teams should be familiar with and prepared to demonstrate our Core Values, particularly Gracious Professionalism®. Core Values must be understood and incorporated into the team's process and evident during the entire event and throughout the season. This requirement applies to everyone on the team as well as spectators who attend with the team.

# Core Values



## Notify the Judge Advisor if you observe...

- Minor “not the best” Core Values behaviors
  - Friendly name calling or play fighting
- Disrespect toward volunteers, coaches or peers
- Team members who can’t answer questions or demonstrate understanding of their work
- Coach working with the robot, computer, other team materials
- Coach speaking in judging sessions
- Clear evidence of adults doing the work for a team
- Criminal behavior (fighting, cheating, stealing, vandalism, etc.)

Judge Advisors are provided a chart to help them determine the appropriate course of action when Core Values concerns arise. Minor “not the best Core Values” behaviors, such as friendly name calling or play fighting, will not influence decision making. If a Judge Advisor hears many of these minor reports about the same team during the tournament, they may have more influence. For anything more serious, the Judge Advisor will follow up with the team or send a group of judges to visit the team and learn more. Often, behavior is observed out of context and isn’t as concerning as it seems at first. It is rare at FLL tournaments, but serious “red level” behaviors, including adults doing the work for a team or criminal behavior can cause a team to be disqualified. When you notify the Judge Advisor of your concern, share exactly what you saw. The Judge Advisor has final discretion about the level of consideration for any Core Values behaviors.

## Award Considerations



Input from other volunteers can help judges make decisions.

FIRST® LEGO® League Judge Training  
Part 4: FLL Awards

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While most information that is used for award considerations comes from judges, input from other volunteers can be critical too. All tournaments should have a form or another method for volunteers to share their observations of teams with the judges. The input from referees and other volunteers can be especially important for determining Champions Award Winners.

## Award Considerations



No team may  
win more than  
one award\*



With a **few**  
exceptions

As awards are determined, consider that no team may win more than one award. There are a few exceptions to this rule.

## Awards Considerations



**EXCEPTION:**  
Teams *can* win  
an award for  
**Robot  
Performance**  
and another  
award

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Part 4: FLL Awards

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The first exception is that teams can win an award for Robot Performance in addition to another award. For example, the second place Champions Award winner might also have the top Robot Game score and win the Robot Performance award.

## Awards Considerations



### **EXCEPTION:**

Coaches and mentors from a team can be recognized with appropriate award

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Part 4: FLL Awards

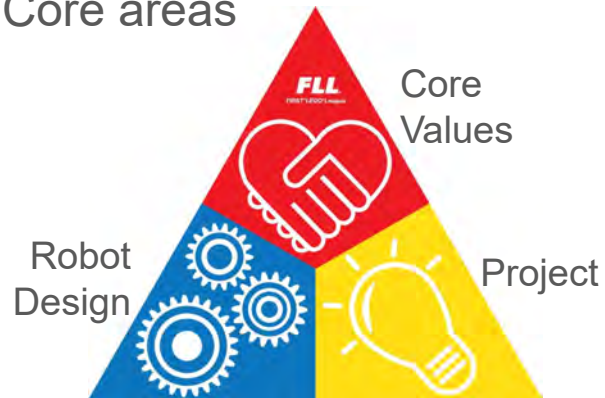
10

The other exception is that coaches and mentors for a team can be recognized with the appropriate awards, regardless of whether their team has received an award.

# Champion's Award



Recognizes Team excellence  
in *all* Core areas



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Part 4: FLL Awards

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We'll start with the Champion's Award. The Champion's Award recognizes those teams that embody the FLL experience by fully embracing FLL Core Values while achieving excellence in both Robot Game and Project. Champion's Award is based on strong, balanced performance across all 3 judged areas and a strong Robot Performance score.



## Champion's Award Components



- Eligible for Awards
- Strong performance across **all** judged areas
- Robot score = **Top 40%**
- **Must** complete Project requirements

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Part 4: FLL Awards

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Teams must be well rounded, which includes meeting basic award eligibility requirements, having a strong performance in all judged judge areas, and a robot game score in the top 40% among teams at the tournament. The 40% is a minimum hurdle for a team to be considered for a Champion's Award. In addition, teams must complete all 3 components of the Project (Identify a real world problem, create an innovative solution and share their research and solution).

# Core Awards



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Part 4: FLL Awards

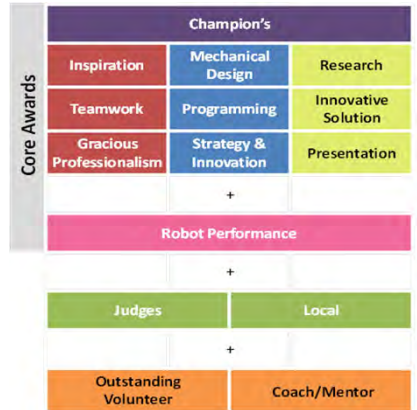
13

Next, we'll move into the FLL Core Awards.

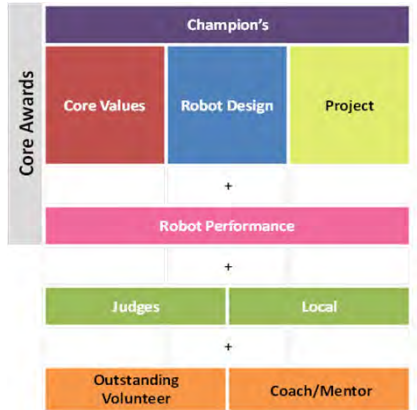
# Awards Structures



## Championship Tournaments / Option for Qualifying Tournaments



## Qualifying Tournaments





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Part 4: FLL Awards

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Depending on the type and size of your tournament, you may encounter two different award structures. At all Championship tournaments and some qualifying tournaments, the “expanded” awards structure is used, which breaks down the three judged areas into three sub awards. For example, in Core Values, three awards are given: Inspiration, Teamwork, and Gracious Professionalism. At some qualifying tournaments, the “Consolidated” awards structure is used, which combines the three sub awards into one, so just one overall Core Values award would be given. The Judge Advisor will give instructions at the beginning of the tournament about how many awards will be given.

# Core Values Awards



**Inspiration**

**Teamwork**

**Gracious Professionalism®**

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Part 4: FLL Awards

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The Core Values are the cornerstone of FLL and other FIRST programs.

Inspiration award covers Discovery, team spirit and integration. Teams honored here have balanced the three aspects of FLL, have enthusiasm, team spirit, and integrated skills and knowledge from FLL into the rest of their lives.

Teamwork awards honor the goals of effectiveness, efficiency and kids do the work. Teams should have demonstrated a clear and efficient process to decision-making, and show that they were at the helm of that process.

Teams honored for Gracious Professionalism demonstrate inclusion, respect and Cooperation. They should have demonstrated good manners and good behavior, respected the input of their members and demonstrated the spirit of friendly competition.

# Project Awards



## Research

## Innovative Solution

## Presentation

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Part 4: FLL Awards

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The focus of Projects Awards is on Research, Innovative Solution and Presentation. It is on the message itself as well as the effectiveness of the message delivery. Creativity is a part of message delivery, but it is not most important criteria for project presentation

Research awards recognize the teams who have a well-defined problem statement, include various and high quality sources, performed their own analysis, and attempted to confirm their solution is original.

Teams recognized for innovative solution have demonstrated that their solution addresses their problem, is innovative by being new and beneficial, and may have created a prototype.

Presentation awards honor a team's effectiveness and creativity in their presentation. Presentations should be engaging, organized, and clear, and include the team's efforts of sharing their work.

# Robot Design Awards



ROBOT

**Mechanical Design**

**Programming**

**Strategy &  
Innovation**

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Part 4: FLL Awards

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Next we look at the Robot awards

Robot Design looks at the key areas that reflect the team's involvement in the process of designing, building, and programming their robot.

In Mechanical Design, honorees stand out for their robot's durability, mechanical efficiency and mechanization.

Teams given a Programming award have devised an efficient, quality program that performs consistently. The robot should operate with minimal driver intervention.

Strategy and Innovation considers Design process, mission strategy and innovation.

## Robot Performance Award



Highest  
Robot Game score  
after 3 official  
rounds

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Part 4: FLL Awards

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**Robot Performance** is based on the team's best score of at least 3 official rounds. This score is determined on the field and it is not judged.

Robot Performance remains the only exception to the one team award rule. Robot Performance is the only award where a team might win that as well as Champion's Award or any of the other awards.

## Judges Awards (Optional)



### Examples

- Rising star
- Perseverance
- Against all odds



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Part 4: FLL Awards

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**Judges' Awards** may be used and customized to recognize a team which has not already received an award, but may have a special circumstance. These special circumstances may include a team whose robot falls to the floor and they persevere to rebuild, or a team whose robot design may display amazing aesthetics and is a reflection of their project focus as well. You might also consider a Judge's Award for a young team that might not have had been nominated for a specific Core Award but whom the judges felt that they wanted to recognize as a Rising Star. Judges awards should always be given a specific title so that teams know why they're being recognized.



## Local Awards (Optional)



**Locally  
defined**



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Part 4: FLL Awards

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Just as their name suggests, **Local Awards** are locally defined. Some events like to recognize the highest average score, Robot Performance consistency, or special Sponsor Awards. This would also be an appropriate place to recognize Robot elimination or alliance round winners.

# Special Recognition Awards



Outstanding  
Volunteer Award



Coach/Mentor  
Award



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Part 4: FLL Awards

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**Special Recognition Awards** are used to recognize **outstanding volunteers, coaches, and mentors**. FLL is built on a base of dedicated volunteers. We strongly recommend that each event recognize these volunteers (particularly at Championships).

# Qualifying Tournaments



**Advancement**  
is based on  
**Champion's Award**  
criteria

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Part 4: FLL Awards

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At qualifying tournaments, the judges will also select teams to advance to the next level of tournaments. Advancement is based on the Champion's Award Criteria. Teams who advance need to meet the basic award eligibility criteria, be well rounded, and meet a minimum Robot Game hurdle. The Judge Advisor will lead you through the process of selecting teams to advance.




Remember:  
What we  
discover is more  
important than  
what we win.

FIRST® LEGO® League Judge Training  
Part 4: FLL Awards

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As you're thinking about the FLL Awards, it's important to remember the FLL Core Value "What we discover is more important than what we win." As a judge, keep in mind that although trophies are handed out at the end of a tournament, the learning process is the true focus of the FLL program.




## ACTIVITY

- Think about a time when you received an award or special recognition. How did winning make you feel?
- Now reflect on the FLL Core Value “what we discover is more important than what we win.” Can you think of a time where you didn’t win any award or special recognition but you had fun and learned from the experience?

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Part 4: FLL Awards

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Take a few minutes to reflect on this FLL Core Value. Think about a time when you received an award or special recognition. How did winning make you feel? Now, can you think of a time where you didn’t win an award or special recognition, but you had fun and learned from the experience?



*Obrigado!*

**FLL Volunteers  
are amazing!**

What is FLL?   Preparing to Judge   FLL Teams   **Awards**   The Decision Process

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The slide features a vertical bar on the left with segments in blue, yellow, red, and teal. A LEGO Mindstorms robot is shown on the left. A speech bubble on the right contains the text 'Obrigado!' and 'FLL Volunteers are amazing!'. At the bottom, a horizontal flowchart with five chevron-shaped boxes contains the text: 'What is FLL?', 'Preparing to Judge', 'FLL Teams', 'Awards' (highlighted in red), and 'The Decision Process'. The number '25' is in the bottom right corner.

Thank you for completing this part of FLL training. Now that you're familiar with the FLL Awards, the next part will explain how the judges determine which teams will receive which awards.

# Contributors



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- Narration
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  - Ashley Sleath, Jr., *FLL & FLL Partner Services Team Coordinator*
- Photography
  - Calum Tsang, *FLL Volunteer*
  - Donald McCoy, *FLL World Festival Judge*
- Assessment
  - Michael Fryda, *Science Teacher, Westside High School, Omaha, NE*

12/3/2018

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Part 4: FLL Awards  
Judge Training

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# Awards Decision Process

FLL Judge Training  
Part 5

2014

What is FLL?   Preparing to Judge   FLL Teams   Awards   **The Decision Process**

Welcome to the fifth part of FLL Judge training.



## Objective

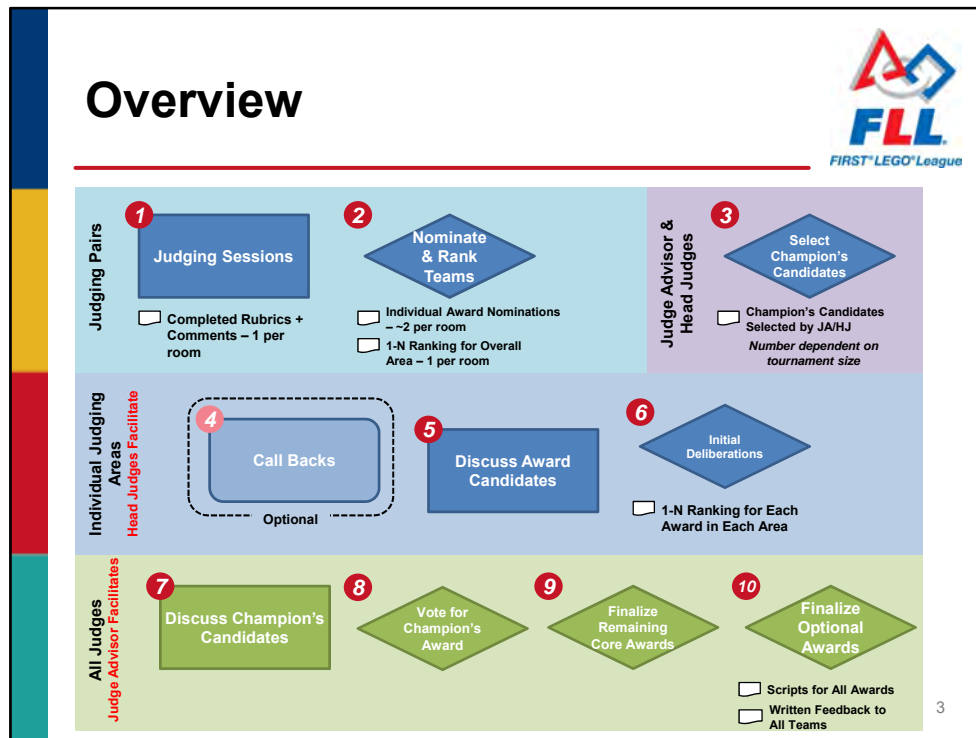


*After completing this part of the training...*



You will be able to outline the process used for FLL deliberations.

This part of the training will outline the process used to determine which teams win awards at FLL tournaments.



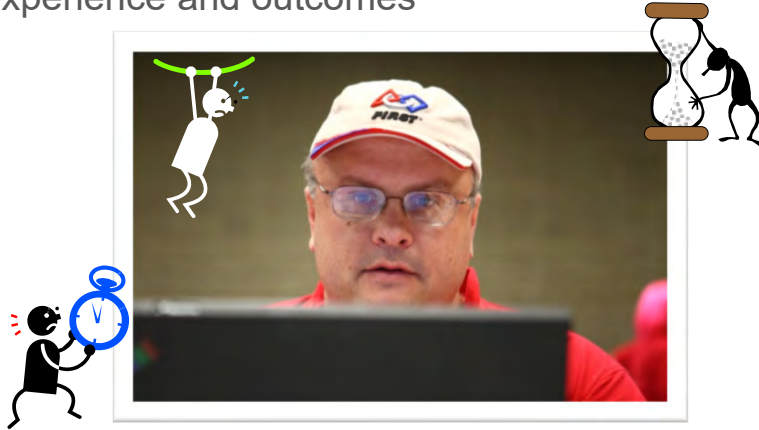
The process used to determine which teams receive awards, known as the deliberations process, is not as complicated as it might seem at first.

Here's a quick introduction to the steps. During each judging session, you'll make notes and complete a rubric for each team. As you see teams, keep a running rank of teams – the easiest way to do this is by putting them in a pile in rank order. Next, you will confirm your ranking of teams and choose up to two teams to nominate for each award from your room. Next, the initial Champions Awards Candidates are identified using ranking and award nomination data from all the judges. Some tournaments will have call backs at this point. Next, all the judges in each area will discuss award candidates and overall ranking in that area. The last steps are done by all the judges, starting with discussion of the Champions Award Candidates, followed by a vote for Champions Award winners. From there, the winners of the remaining core awards are finalized, followed by any optional awards. Finally, scripts are written for the Awards Ceremony.

## Judge Advisor and Head Judges



Responsible for overall team judging experience and outcomes



FIRST® LEGO® League Judge Training  
Part 5: The Decision Process

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You don't need to memorize the chart, though, as a Judge Advisor will be there to lead you through the process.

Judge Advisors are responsible for all aspects of the judging process, including successful deliberations, which ultimately translate into a rewarding experience for all teams.

## Deliberations Room Covenants



- What happens here, stays here
- Respect each other
- Communicate honestly
- Contribute constructively
- There can be several right answers
- Work together to reach consensus
- Stay focused
- Participate
- Help us stay on schedule
- Listen attentively
- Have fun!

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Judges are asked to abide by a Deliberations Room code of ethics - What happens in the room stays in the room. All discussions of team performance should happen in the deliberations room or between judging pairs, and not at lunch or in the hallways. There are a lot of frank, open and honest preliminary discussions that do not need to be heard beyond the deliberations room.

Remember to treat all judges with respect. They are volunteering just like you are. Communicate honestly and communicate constructively.

Realize that there can be several right answers and that is why you are judges not referees. Referees have clearer rules.

Judging is much more subjective, a different group of judges can come to a different final answer depending on what they see and what they believe to be the best approach. Realize that your answer is right even if it is different from another judge. Work together to reach a consensus. That doesn't mean that everyone has to agree on everything but as a whole you should feel positive about the results of the process. Stay focused, stay engaged, and participate.

Most importantly, have fun. We want you to be inspired and to inspire the kids. The best way to do that is to ensure they have a lot of fun doing what they are doing.

# Judging Process



## Judging Pairs/Teams

1

Judging Sessions



Completed: Rubrics and Comments – 1 per team, per room

2

Nominate and Rank Teams

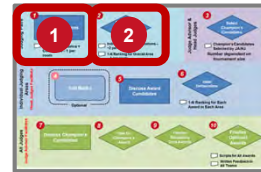


Individual Award Nominations – 2 per room



1-N Ranking for Overall Area – 1 per room

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In the first steps, judge pairs evaluate teams, rank them, and nominate them for awards. They do this only for the teams that they see.

Every team is judged by 3 different pairs of judges - Core Values, Project and Robot Design.

The first step is the judging sessions. The recommendation is that you see about 12 teams on average in order to help you remember differences between teams.

As mentioned previously, be as specific as possible when asking questions, taking notes, discussing teams with co-judges. Pay close attention to detail. Your notes with evidence that supports a team's ranking will be especially helpful for decision making for awards.

1

# Rubric Completion



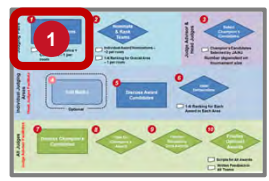
Rating	Developing	Accomplished	Emergency
4	3	2	1
5	4	3	2
6	5	4	3
7	6	5	4
8	7	6	5
9	8	7	6
10	9	8	7
11	10	9	8
12	11	10	9
13	12	11	10
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93	92	91	90
94	93	92	91
95	94	93	92
96	95	94	93
97	96	95	94
98	97	96	95
99	98	97	96
100	99	98	97

*The robot was very cool and very smart. Am well made. Swirling around and very good. Very good demonstration. Superb line following. Robot and simple design. Excellent use of Lego parts and available robot resources.*

*Excellent use of my robot to build a foundation! Well demonstrated. Good. Good that you described a base and built upon it - allowed for a lot of flexibility, good idea to base upon a plan and know your risks. Continue to build upon your foundation.*

*Your mission planning is very well done. Strategy of using a power chassis to the maximum, use of the 2000 base on attachments and mission design. Your demonstration is excellent! That means great!*

- Each judging pair/team prepares one rubric per team
- First step in building consensus
- Critical to the deliberative process



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The rubric is the standardized evaluation tool to help judges know what to look for during all FLL judging sessions. After viewing each team, judging pairs should complete one rubric per team.

In addition to assigning a level, the Rubric should contain meaningful feedback in each category.

Completing the Rubric is one of the most essential tasks of any judge as it is the direct link between the judging process and the teams. Providing comments and feedback for the teams is how they recognize their strengths and learn where their challenges may be.

These forms are returned to teams at the end of the day or soon after the event.

Complete the trainings for each judging area to get more tips on how to quickly complete rubrics while providing excellent feedback to teams.

2

## Judge Pairs Nominate and Rank



- Judge pair creates an overall ranking of all teams seen
- Most easily accomplished by stacking team rubrics in rank order continually after each team
- Judge pairs determine which teams to nominate for awards
- Call-backs scheduled if/as needed

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Part 5: The Decision Process

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As teams are seen, the judge pair will create an overall ranking of teams. The best practice is to create a stack of rubrics in rank order. As each team is seen and their rubric is completed, together with the other judge, determine whether that team's level of achievement was greater than or less than each previously seen team. Simply insert the team's rubric according to their performance relative to the other teams you've seen so far. After you see all the teams, review and confirm your rank order list.

After the teams are judged, each judging pair completes their Award Nominations Worksheet. This form allows each judging pair to select 2-3 teams from the group of teams that they judged to be nominated for each of the awards.

So in this example the judging pair from this Robot Design room picked 2 teams to consider for Mechanical Design, 2 teams to consider for programming, 2 teams to consider for strategy/innovation. They listed a couple reasons why those teams were chosen to help facilitate discussions later. Each Robot Design judging pair will complete the same process.

Each judging pair may also submit their recommendations for Judges Award, Adult Coach/Mentor and Young Adult Mentor as applicable. For those regions that have call backs, if there is particular information that you want to get from a team you can note it at the bottom of this form.

# Judging Process



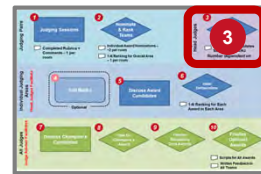
## Judge Advisor & Head Judges

3

Select Champion's Candidates



Champion's Candidates Selected by Judge Advisor and Head Judges



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Step three works a little differently at each tournament. In this outline, the Judge Advisor and Head Judges compile all the ranking and award nomination information from the judge pairs. They use this information to select initial Champions Award Candidates. In some regions, additional judges may join the selection process, and in small tournaments, initial candidates may be obvious after a short discussion. Many tournaments proceed directly to step 5 with deliberations in each judging area.



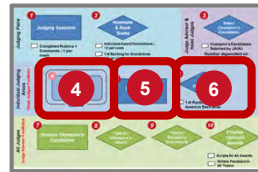
# Judging Process



Each Judging Area with Head Judges Facilitating



1-N Ranking for Each Award in Each Area



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Part 5: The Decision Process

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After the Champion's Award teams to consider are selected, some tournaments use call-backs to gather any other additional information about any team to help make decisions.

All or some of the teams considered for awards may be scheduled for a call back.

If the tournament does have call backs, make it clear to the teams that a call back should not be an expectation for an award. Just because they got called back does not necessarily mean they are going to win a trophy and just because they didn't get called back does not necessarily mean that they will not win a trophy.

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# Initial Deliberations



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All judges from each area will then meet together and use their room rankings to compile an overall ranking of each award in their area. This part of deliberations is facilitated by the Head Judges in each Area.

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## Preliminary Ranking

Area judges review teams nominated by pairs

Pairs highlight reasons teams were nominated

Deliberative discussion  
“normalizes” team nominations

Voting is often the easiest way to produce a preliminary merged ranking

The image shows two documents related to the FLL award ranking process. The top document is the 'Core Values Award Rankings Worksheet', which is a table for recording nominations. It has columns for Rank, Team, Reason, and Score. The bottom document is a flowchart titled 'Award Ranking Process' with a red circle around the number 6, indicating the 'Preliminary Ranking' step.

Rank	Team	Reason	Score
1	1910	1	1807
2	1929	2	313
3	518	3	167
4	1913	4	1907
5	779	5	594
6	925	6	125
7	145	7	1943
8	77	8	79
9	590	9	557
10	1807	10	425
11	1943	11	707
12	3090	12	1900

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Part 5: The Decision Process

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In this process, teams who are outstanding in individual award areas are determined by all the judges for each Core area.

Much discussion is typically involved to highlight the strength of one team against another, for example...

The judging pair that nominated **The Purple Panthers** team for Mechanical Design Award would highlight the reasons why the team was nominated, “they had a very robust drive train, they had no failures, their design cycles were outstanding, the documentation for how they picked particular attachments was excellent...” Keep it short and factual and try to avoid, “they were just great and everyone should just give them an award because they blew us away”.

Deliberative discussion is the primary tool used in FLL to “normalize” the team nominations and confirm that all the great teams didn’t happen to all be assigned to the same judging pair.

Each Judging pair that nominated a team for award consideration will have the same opportunity to speak on behalf of the team they nominated.

Voting can often be the easiest way to merge the rankings. Be sure to speak up if you see any teams who are missing from the Award Ranking list that you expected to see or if there are any teams on the list you didn’t expect to see.

The deliberations process sometimes seems long and this point in the day, but it's important to stay engaged. If your judging area finishes before the other areas, be sure to follow the Head Judge or Judge Advisor's instructions about what to do while you wait. Often, you'll be asked to stay in the deliberations room so the discussion can continue right after the other areas finish.

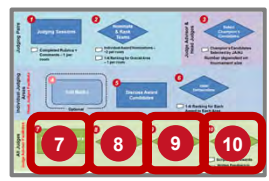
# Judge Deliberations



## All Judges - Judge Advisor Facilitates

- 7 Discuss Champion's Candidates
- 8 Vote for Champion's Award
- 9 Finalize Remaining Core Awards
- 10 Finalize Optional Awards

- Written Feedback to All Teams
- Create Scripts for All Awards



The last steps in deliberations are done by all the judges together. Champions Awards are decided first, followed by the other Core Awards. Any optional awards are decided last.

# Final Deliberations



Judge advisor facilitates  
Supported by head judges



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Part 5: The Decision Process

Final deliberations are facilitated by the judge advisor with help from the head judges in each area.

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## Champion's Award Determined 1st



Judges meet to discuss Champion's Award candidates

Judges discuss the strengths of teams in consideration and review factors such as Core Values issues, final Robot Performance scores, other volunteer input, etc.

Judges vote to determine the Champion's Award winner(s)

Teams that do not win a Champion's Award are then considered for Core Awards based on preliminary rankings provided by each area

All other Optional Award winners are selected



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Part 5: The Decision Process

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After Initial Deliberations the judges consider Champion's Award candidates.

The list of Champion's Award candidates, usually identified by the Judge Advisor, is presented to all of the Judges. Each judging area highlights the reasons that teams were strong in their area.

For the sake of time, Judges are often given a time limit, such as 2 minutes, to describe the strengths of each Champions Award candidate team in each area. If you're asked to speak about a team, keep it short, factual, and focused on specific evidence that supports their strengths.

Once all the Champion's Award candidates have been discussed, a voting process is used to determine the Champion's Award winner(s). Every judge should vote unless they must abstain due to a conflict of interest.

Champions Award winning teams must be well rounded and meet the 40% Robot Performance Hurdle. This means that a Champions Award winning team might not be first place in any area. For example, a team who was 4<sup>th</sup> place in each of Core Values, Project, and Robot Design would be a better candidate for Champions Award than a team who was 2<sup>nd</sup> place in Project, 3<sup>rd</sup> place in Robot Design, but ranked 10<sup>th</sup> in Core Values.

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## Teams Considered for Multiple Awards



Priority

1. Champion's Award
2. Core Awards
3. Optional Awards

Teams should receive award in the category they ranked highest

If team achieves highest ranking in more than one category, judges must determine the most appropriate award to give that team

- Sometimes it is important to consider the merits of the second place team that might rise to make the best decision
- Remember the goal is to recognize the best group of teams for ALL awards



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Part 5: The Decision Process

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Once the Champion's Awards have been decided, the judges will finalize the remaining Core Awards based on the rankings already created in each area. Because teams can only win one award, a team that is ranked 1<sup>st</sup> in two different areas would require some discussion about which area is most appropriate for recognition.

After all the Core Awards, it is time to finalize the optional awards.



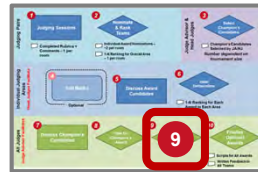
9

## Deciding Between Teams



When deciding who will receive an award between **two teams who are otherwise equal**, consider:

- Core Values
- Robot Game Scores (especially for Robot Design Awards)
- Challenges
- Team Characteristics
  - Experience
  - Age expectations
  - Number of team members



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Part 5: The Decision Process

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Sometimes, judges have a hard time deciding between two teams to receive awards. The discussion should always start with what was observed in the judging sessions. Your notes and comments that reference specific evidence should be the first tools to determine which team should receive an award.

If two teams are equal in their judging performance, you might consider some other factors as tie breakers, such as their Core Values, Robot Game Scores (especially for Robot Design Awards), any challenges they encountered, and other team characteristics, like their experience with FLL, expectations for their age, or number of team members. When discussing Core Values awards, judges will always consider Core Values. During discussions for other awards, these factors should only be discussed when the two teams appear to be otherwise equal. If one team did better than the other based on their judging session, that team should be selected without weighting any of these factors.

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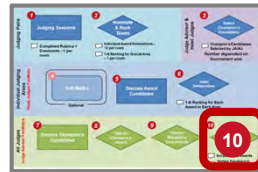
## Awards Ceremony Scripts



Judges familiar with the winning teams should prepare a specific, meaningful explanation for why each team was selected.

Incorporate the team theme, or something special about the team to foreshadow their win before announcing team name

Be creative, use humor if appropriate, keep it short and be professional.



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Part 5: The Decision Process

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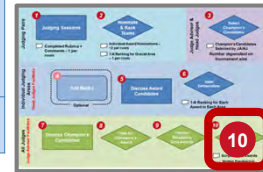
In preparation for the awards ceremony, Awards Scripts will need to be written. Judges familiar with the award winning teams should prepare a specific, meaningful explanation for why each team was selected. Write two or three sentences to be read at the awards ceremony. Incorporate team name, theme, or something special about the team to foreshadow their win. Be creative, use humor if appropriate, keep it short and be professional.

# Awards Ceremony Scripts



## Sample Award Script Format

Sentence	Content
1	A subtle hint, like being a rookie team, that applies to many teams
2	A hint which the winning team might understand, such as team color, but is vague enough to possibly refer to multiple teams
3	A bigger hint, leaving the team somewhat sure who it is, but not 100% positive.
4	“And the Award goes to...”



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Here’s a sample award script that may help get the creativity going. Begin with one sentence that gives a subtle hint, like being a rookie team, that applies to many teams. In the second sentence, give a hint that the winning team might understand, such as a team color, but keep it vague enough that it still might refer to multiple teams. In the third sentence, give a bigger hint that tells the winning team it’s probably them, but they still can’t be completely positive. The last sentence should start... And the Award goes to...

# Sample Scripts

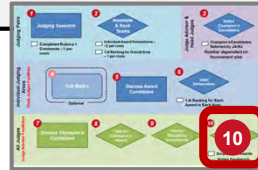


1 General Hint

2 More specific hint

3 Still not sure

Our first-place programming team had concise, well-documented, modular code. They used advanced techniques like PID line following. With a good use of both sensors and mechanical positioning they could navigate and innovate and innovate and innovate until the sun came up. The first-place Programming award goes to Team 17200, Dawn of Innovation 3!



Here is an example of a well-written script:

Our first-place programming team had concise, well-documented, modular code.

They used advanced techniques like PID line following.

With a good use of both sensors and mechanical positioning they could navigate and innovate and innovate and innovate until the sun came up.

The first-place Programming award goes to Team 17200, Dawn of Innovation 3!

# Sample Scripts

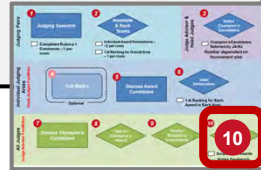


1 General Hint

2 More specific hint

3 Still not sure

Inspiring others for this team comes easily. They've discovered how to **share their vision effectively**, applying FIRST values in everything they do. They even found **some time to dance with seniors, too**. Using their normal method, sharing all they had to say, this **preppy group was anything but grey**. The first-place Inspiration award goes to Team 15700 SAP Grey Matters!



And one more example:

Inspiring others for this team comes easily.

They've discovered how to share their vision effectively, applying FIRST values in everything they do.

They even found some time to dance with seniors, too.

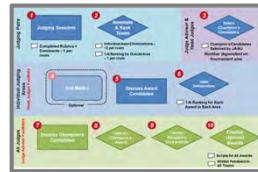
Using their normal method, sharing all they had to say, this preppy group was anything but grey.

The first-place Inspiration award goes to Team 15700 SAP Grey Matters!

## Summary



- Judging Sessions
- Rank teams / nominate for awards
- Initial Deliberations by area
- Final Deliberations
  - Champions Awards
  - Core Awards
  - Judges & Local Awards
- Script writing



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Part 5: The Decision Process

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In summary, you'll begin by seeing around 12 teams in the judging sessions. Within your Judge Pair, you'll rank teams and nominate them for awards. Next each area will complete initial deliberations to decide which teams are nominated for each award in the area. In final deliberations, Champions Awards are decided first, followed by the Core Awards, and then the optional Judges and Local Awards. The deliberations process finishes by judges writing scripts to include in the awards ceremony for each award winning team.

## Join the High Five Line



Hard part is DONE! RELAX!

Celebrate with the teams

The Judge Advisor or tournament personnel will instruct you on Awards Ceremony procedures

You may be asked to:

- Sit in a special area and be recognized as a judge
- Distribute medals or trophies to teams
- Speak to the audience about why a team won a certain award



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Part 5: The Decision Process

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Now is the time to relax and celebrate. The hard part is done, enjoy sharing in the teams' excitement.

This is one more opportunity to interact with teams and serve as a positive role model.

At the award ceremony, judges are often asked to sit in a special area, be recognized, assist with distributing medals or trophies, or read the award script announcing why a team won a specific award.

## Next Steps



- Complete Core Values, Project, or Robot Design Judge Training
- Review Judge Prep Pack
- Receive event details
- Have fun!
- Sign up for another *FIRST* event



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Part 5: The Decision Process

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You're almost finished with FLL Judge Training. In order to become a certified FLL Judge, be sure to complete the Certification questions. You'll need to receive an 80% or greater to pass. If you have trouble, you can complete the questions again until you reach 80%.

Now that you know the general information on FLL Judging, you'll also need to complete Core Values, Project, or Robot Design Judge Training. Each area training also includes questions that require a passing score to be a Certified Judge in that area.

Before your event, be sure you review the Judge Prep Pack and receive the details about your event. Remember, being prepared as a judge will help you have a great time at the event and gives teams the most fair experience possible.

After you have a great time serving as a judge, we hope you'll consider volunteering again at an FLL or another FIRST event.





## ACTIVITY

Help yourself remember the deliberations process by making your own chart, graph, or list of steps in deliberations. You can use the flow chart as a starting point if you wish or create your own format.

Make sure to include all the steps and indicate your role each step. For example, what will you be doing during initial deliberations?

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Part 5: The Decision Process

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The deliberations process can seem complicated at first. Help yourself remember the deliberations process by making your own chart, graph, or list of the steps. You can use the flow chart as a starting point, or design your own. Be sure to include all the steps. What will you be doing during each part of the process?

**Bedankt**

***FLL Volunteers  
are fabulous!***



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Thank you again for completing FLL Judge training! Now that you're familiar with the basics of judging, be sure to complete the training for the area you'll be judging: Core Values, Project, or Robot Design.

# Contributors



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  - Skip Gridley, *FLL Global Judge Advisor*
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- Photography
  - Calum Tsang, *FLL Volunteer*
  - Donald McCoy, *FLL World Festival Judge*
- Assessment
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12/3/2018

FIRST LEGO League Judge Training  
Part 5: The Decision Process  
Judge Training

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Welcome to Core Values Judge Training.

## Objective



*After completing this part of the training...*



**You will be able to assess the Core Values of FLL teams.**

FIRST® LEGO® League Judge Training  
Core Values

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After completing this part of the training, you'll be prepared to assess the Core Values of FLL teams.

# FLL Core Values



- We are a team.
- We do the work to find solutions with guidance from our coaches and mentors.
- We know our coaches and mentors don't have all the answers; we learn together.
- 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!**

FIRST® LEGO® League Judge Training  
Core Values

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To refresh your memory, here are the FLL Core Values.

We are a team.

We do the work to find solutions with guidance from our coaches and mentors.

We know our coaches and mentors don't have all the answers; we learn together.

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!**

## Core Values Judging



Why have formal Core Values Judging?

- Assess all Core Values
- Dedicated, consistent environment for all teams



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Core Values

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Some Judges may feel Core Values judging is subjective than say, Robot Design. That's one reason we have formal Core Values Judging. It allows judges to more objectively assess each of the Core Values and provides a dedicated, consistent environment for all teams.

While Core Values elements may be less tangible, a number of tools and techniques exist to help judges gain insight about teams, and reinforce for everyone why Core Values judging is such an important component of *FIRST* LEGO League.

## Core Values Judging



Minimum 10 minute session in separate judging area

- ~ 5 minutes teamwork activity (optional)
- ~ 2 minutes Core Values Poster (Regional option)
- ~ 3 minutes Questions

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Core Values

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Core Values judging sessions take place in a designated judging area and are at least 10 minutes long. During the session, many regions will ask teams to complete a short teamwork activity. If a Core Values Poster is used in your region, teams should have about 2 minutes to present the information on their poster. For the remainder of the time, you can ask follow up questions. Since Core Values Judging sessions are less formally structured than the other areas, these times are approximate.



## Judging Core Values



- Observation of teams as they work on a teamwork activity. Completing it is not important – it's the process that counts.
- Question and answer interview about the team's understanding of Core Values and Teamwork



FIRST® LEGO® League Judge Training  
Core Values

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If teams complete a teamwork activity as part of Core Values Judging in your region, begin the session by presenting the instructions to teams. Make notes as they complete the activity. Completing the teamwork activity is not important – it's the process that counts.

The question and answer interview is your opportunity to find out more about the team's understanding of Core Values and teamwork.

Teams will practice their presentations on Core Values and answers to questions. Do not mistake a "rehearsed" speaker for someone who has not internalized the concepts. The very act of rehearsing helps teams integrate those concepts.

# Judging Core Values



## Core Values Posters

- The FLL Partner for each region decides whether they will be used.
- A tool to help teams communicate information to Judges



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Core Values

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The FLL Partner for each region decides whether teams will be required to create a Core Values Poster. If it's used in your area, be sure to review the instructions provided to teams, so you'll know what to expect. The Core Values Poster and any other visual aids presented by teams are intended to serve as tools for the team to communicate information to judges. Some of the Core Values are more difficult to observe in judging – the Poster is a chance for the team to think about those Core Values in advance and be prepared to share that information with judges. If a team is required to present a poster, but doesn't have one, the team is still eligible for awards. However, it may be more challenging for them to communicate the right information to judges.

## Judging Core Values



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

It's OK if:

- Teams have a strong leader
- Team members specialize
- Team has clearly identified roles
- Team does not have clearly defined roles

**All children should be able to talk about their role.**



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As you're observing teams, keep in mind that many different team structures can be effective. It's okay if the team has a strong leader, team members specialize in specific areas, and the team has clearly identified roles (like Robot Leader, Project Captain, or Programmer). It's also okay if the team does not have clearly defined roles, as long as team members can articulate their contributions. Team members should be able to direct judges' questions to the best person to answer.

On Accomplished teams, all team members should be able to talk about their roles. Exemplary teams know, understand and utilize each other's roles effectively.

## Asking Core Values Questions



Ask questions that help you complete the rubric.

**Discovery:** *What's the most important thing you learned this season?*

**Efficiency:**

*How did your team decide what to do at each meeting?*

**Inclusion:** *How does your team decide which ideas they will pursue?*



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As you decide what questions to ask, choose questions that will help you complete the rubric. Be sure to ask about any items on the rubric if you need more information.

As mentioned in the general FLL Judge training, good questions are open ended, contain only one idea, and lead the team to provide the information you need. A few good questions are “What’s the most important thing you learned this season?” “How did your team decide what to do at each meeting?” and “How does your team decide which ideas they will pursue?”

Refer to the Judge Prep pack for a helpful list of sample questions. Consider making a list of standard questions you’ll ask every team, but also be ready to ask each team the right questions to help you complete the rubric.

# Judged Components



- Inspiration**
  - Discovery
  - Team Spirit
  - Integration
- Teamwork**
  - Effectiveness
  - Efficiency
  - Kids Do the Work
- Gracious Professionalism**
  - Inclusion
  - Respect
  - Coopertition®

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Now, let's go into more detail about what's judged in Core Values.

Core values is broken into three parts – Inspiration, Teamwork, and Gracious Professionalism.

Remember, each team should be judged on the information that they provide and/or demonstrate in the Judging room, not what someone knows about a team outside of the tournament.

# Judged Components



## Inspiration

### Discovery

- Balance all three aspects, focus on learning

### Team Spirit

- Cohesive team identity

### Integration

- Learning and applying Core Values outside of FLL

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Inspiration covers Discovery, Team Spirit and Integration.

In Discovery, teams describe how they balance the three aspects of *FIRST* LEGO League – Robot, Project and Core Values – and what they learned in the process.

For Team Spirit, look for enthusiasm, cohesive team identity, having fun, and showing great *FIRST* LEGO League spirit to the general community.

Under integration, look for concrete examples of how teams applied Core Values. Listen for stories on how teams integrate new knowledge and skills into everyday life.

# Judged Components



## Teamwork

### Effectiveness

- Clear decision making process

### Efficiency

- Time and resources used wisely, role management, and self-correction

### Kids Do the Work

- Coaches do not program robots, do research, or dictate ideas or decisions

Teamwork covers Effectiveness, Efficiency, and ensuring Kids Do the Work.

In Effectiveness, look for teams to have clear processes to make decisions and resolve problems appropriately.

For Efficiency, assess how teams used their time, energy and resources. Do they know how to stay on track to meet their goals?

Under Kids Do the Work, teams should easily be able to demonstrate that they understand and did the work, not the coach or a parent.

# Judged Components



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## Gracious Professionalism

### Inclusion

- Team values everyone and their ideas, understands value of teamwork

### Respect

- Act and speak with integrity, understand actions impact others

### Coopertition®

- Friendly competition, helping each other and other teams

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Gracious Professionalism covers Inclusion, Respect, and Coopertition.

For Inclusion, look at how teams integrate ideas from everyone and make each team member feel valued.

In Respect, look for teams who understand how their actions impact others – respectful behavior should be the norm.

Under Coopertition, look for how the team honors the spirit of friendly competition. Look especially for teams who help other teams or were assisted by other teams.



# Core Values Rubric



Inspiration  
 Teamwork  
 Gracious Professionalism®

FLL Core Values		Team Number	
FIRST LEGO League		Judging Room	
<p>Directions: For each skill area, clearly mark the box that best describes the team's accomplishment. If the team does not demonstrate skill in a particular area, then put an "X" in the first box for Not Demonstrated (ND). Please provide as many written comments as you can to acknowledge each team's hard work and to help teams improve. When you have completed the evaluation, please circle the events for which you would like this team to be considered.</p>			
	Beginning	Developing	Accomplished
Inspiration	<p><b>Discovery</b> National recognition of First Lego League (FLL) First Lego League (FLL) team.</p> <p>1) Recognition only, via award.</p> <p>2) Recognition via award and display on team's website.</p>	<p>1) Recognition via award.</p> <p>2) Recognition via award and display on team's website.</p>	<p>1) Recognition via award and display on team's website.</p> <p>2) Recognition via award and display on team's website.</p>
	<p><b>Team Spirit</b> Enthusiasm and pride in members of the team identity.</p> <p>1) Team identity.</p> <p>2) Team identity and logo.</p>	<p>1) Team identity.</p> <p>2) Team identity and logo.</p>	<p>1) Team identity and logo.</p> <p>2) Team identity and logo.</p>
	<p><b>Innovation</b> Creativity of FLL team and their ability to identify or create novel and practical solutions to a problem.</p> <p>1) Team able to identify at least one novel solution.</p> <p>2) Team able to identify at least one novel solution.</p>	<p>1) Team able to identify at least one novel solution.</p> <p>2) Team able to identify at least one novel solution.</p>	<p>1) Team able to identify at least one novel solution.</p> <p>2) Team able to identify at least one novel solution.</p>
Teamwork	<p><b>Efficiency</b> Problem solving and decision making demonstrates team's teamwork.</p> <p>1) Demonstrated team's problem solving.</p> <p>2) Demonstrated team's problem solving.</p>	<p>1) Demonstrated team's problem solving.</p> <p>2) Demonstrated team's problem solving.</p>	<p>1) Demonstrated team's problem solving.</p> <p>2) Demonstrated team's problem solving.</p>
	<p><b>Management</b> Team's ability to work and solve problems.</p> <p>1) Team's ability to work and solve problems.</p> <p>2) Team's ability to work and solve problems.</p>	<p>1) Team's ability to work and solve problems.</p> <p>2) Team's ability to work and solve problems.</p>	<p>1) Team's ability to work and solve problems.</p> <p>2) Team's ability to work and solve problems.</p>
	<p><b>Key Do the Work</b> Appropriate balance between team's responsibility and coach's guidance.</p> <p>1) Coach's guidance is minimal.</p> <p>2) Coach's guidance is minimal.</p>	<p>1) Coach's guidance is minimal.</p> <p>2) Coach's guidance is minimal.</p>	<p>1) Coach's guidance is minimal.</p> <p>2) Coach's guidance is minimal.</p>
Gracious Professionalism®	<p><b>Respect</b> Consideration and appreciation for the accomplishments and skills of all team members.</p> <p>1) All team members are treated with respect.</p> <p>2) All team members are treated with respect.</p>	<p>1) All team members are treated with respect.</p> <p>2) All team members are treated with respect.</p>	<p>1) All team members are treated with respect.</p> <p>2) All team members are treated with respect.</p>
	<p><b>Support</b> Team's ability to support and assist other teams.</p> <p>1) Team's ability to support and assist other teams.</p> <p>2) Team's ability to support and assist other teams.</p>	<p>1) Team's ability to support and assist other teams.</p> <p>2) Team's ability to support and assist other teams.</p>	<p>1) Team's ability to support and assist other teams.</p> <p>2) Team's ability to support and assist other teams.</p>
	<p><b>Cooperation</b> Team's ability to work together and cooperate with others.</p> <p>1) Team's ability to work together and cooperate with others.</p> <p>2) Team's ability to work together and cooperate with others.</p>	<p>1) Team's ability to work together and cooperate with others.</p> <p>2) Team's ability to work together and cooperate with others.</p>	<p>1) Team's ability to work together and cooperate with others.</p> <p>2) Team's ability to work together and cooperate with others.</p>
<p><b>Strengths:</b> Inspiration</p>		<p><b>Strengths:</b> Teamwork</p>	
		<p><b>Strengths:</b> Gracious Professionalism®</p>	

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The rubric is divided into the three Core Values sub areas.

# Core Values Rubric



Judges evaluate team performance in each rubric criteria

ND = "Not Demonstrated"

FLL Core Values		Team Number Judging Room			
<p>Directions: For each skill area, clearly mark the box that best describes the team's accomplishments. If the team does not demonstrate skill in a particular area, then put an "X" in the first box for Not Demonstrated (ND). Please provide as many written comments as you can to acknowledge each team's hard work and to help teams improve. When you have completed the evaluation, please circle the awards for which you would like this team to be considered.</p>					
		<b>Beginning</b>	<b>Developing</b>	<b>Accomplished</b>	<b>Exemplary</b>
Discovery		Balanced emphasis on all three aspects (Robot, Project, Core Values) of FLL (award subject about winning awards)			
	N D	emphasis on only one aspect; others neglected	emphasis on two aspects; one aspect neglected	emphasis on all three aspects	balanced emphasis on all three aspects
Inspiration		Enthusiastic and fun expression of the team identity			
	N D	minimal enthusiasm AND minimal identity	minimal enthusiasm OR minimal identity	team is enthusiastic and fun; clear identity	team engages others in their enthusiasm & fun; clear identity
Integration		Application of FLL values and skills outside FLL (ability to describe current and potential examples from daily life)			
	N D	team does not apply FLL values and skills outside FLL	team able to describe at least one example	team able to describe multiple examples	team able to describe multiple examples, incl. individual stories
Comments:					
Effectiveness		Problem solving and decision making processes help team achieve their goals			
	N D	team goals AND team processes unclear	team goals OR team processes unclear	clear team goals and processes	clear processes enable team to accomplish well defined goals
Efficiency		Resources used relative to what the team accomplishes (time management, distribution of roles and responsibilities)			
	N D	limited time management AND unclear roles	limited time management OR unclear roles	excellent time management and role definition allows team to accomplish most goals	excellent time management and role definition allows teams to accomplish all goals
<p><b>Kids Do the Work</b> Appropriate balance between team responsibility and coach guidance</p>					

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As a judge, you'll evaluate team performance in each rubric criteria. From beginning to exemplary, each rubric area specifies the team behavior you should see at that level. You can mark "ND" for "Not Demonstrated" if the team doesn't provide any information to help you assess what they did.

In FLL, we'd like every team to strive for the "Accomplished" level. One approach to evaluating a team is to start by assuming they are accomplished, then adjust their evaluation based on the team's performance.

# Core Values Rubric



Judges' Comments are very important to teams. Constructive feedback helps teams grow.



FLL Core Values		Team Number	
Judging Room		Judging Room	
<p>Directions: For each skill area, checkmark the box that best describes the team's accomplishments. If the team does not demonstrate skill in a particular area, check "N/A" in the box for Not Demonstrated (N/A). Please provide as many written comments as you can to acknowledge each team's hard work and to help teams improve. When you have completed the evaluation, please circle the number for which you would like this team to be considered.</p>			
Engineering	Developing	Accomplished	Exemplary
<p><b>Design</b></p> <p>1. Problem or challenge was clearly defined.</p> <p>2. Solution was designed and built.</p> <p>3. Solution was tested and refined.</p>	<p>1. Problem or challenge was defined.</p> <p>2. Solution was designed.</p> <p>3. Solution was built.</p>	<p>1. Problem or challenge was defined.</p> <p>2. Solution was designed and built.</p> <p>3. Solution was tested and refined.</p>	<p>1. Problem or challenge was defined.</p> <p>2. Solution was designed and built.</p> <p>3. Solution was tested and refined.</p> <p>4. Solution was improved.</p>
<p><b>Team Skills</b></p> <p>1. Team members worked together to complete the team's objectives.</p> <p>2. Team members shared ideas and resources.</p> <p>3. Team members worked together to solve problems.</p>	<p>1. Team members worked together.</p> <p>2. Team members shared ideas.</p> <p>3. Team members worked together to solve problems.</p>	<p>1. Team members worked together.</p> <p>2. Team members shared ideas and resources.</p> <p>3. Team members worked together to solve problems.</p>	<p>1. Team members worked together.</p> <p>2. Team members shared ideas and resources.</p> <p>3. Team members worked together to solve problems.</p> <p>4. Team members worked together to improve their solution.</p>
<p><b>Organization</b></p> <p>1. Team members worked together to complete the team's objectives.</p> <p>2. Team members shared ideas and resources.</p> <p>3. Team members worked together to solve problems.</p>	<p>1. Team members worked together.</p> <p>2. Team members shared ideas.</p> <p>3. Team members worked together to solve problems.</p>	<p>1. Team members worked together.</p> <p>2. Team members shared ideas and resources.</p> <p>3. Team members worked together to solve problems.</p>	<p>1. Team members worked together.</p> <p>2. Team members shared ideas and resources.</p> <p>3. Team members worked together to solve problems.</p> <p>4. Team members worked together to improve their solution.</p>
<p><b>Problem Solving</b></p> <p>1. Team members worked together to complete the team's objectives.</p> <p>2. Team members shared ideas and resources.</p> <p>3. Team members worked together to solve problems.</p>	<p>1. Team members worked together.</p> <p>2. Team members shared ideas.</p> <p>3. Team members worked together to solve problems.</p>	<p>1. Team members worked together.</p> <p>2. Team members shared ideas and resources.</p> <p>3. Team members worked together to solve problems.</p>	<p>1. Team members worked together.</p> <p>2. Team members shared ideas and resources.</p> <p>3. Team members worked together to solve problems.</p> <p>4. Team members worked together to improve their solution.</p>
<p><b>Risk-Do the Work</b></p> <p>1. Team members worked together to complete the team's objectives.</p> <p>2. Team members shared ideas and resources.</p> <p>3. Team members worked together to solve problems.</p>	<p>1. Team members worked together.</p> <p>2. Team members shared ideas.</p> <p>3. Team members worked together to solve problems.</p>	<p>1. Team members worked together.</p> <p>2. Team members shared ideas and resources.</p> <p>3. Team members worked together to solve problems.</p>	<p>1. Team members worked together.</p> <p>2. Team members shared ideas and resources.</p> <p>3. Team members worked together to solve problems.</p> <p>4. Team members worked together to improve their solution.</p>
<p><b>Research</b></p> <p>1. Team members worked together to complete the team's objectives.</p> <p>2. Team members shared ideas and resources.</p> <p>3. Team members worked together to solve problems.</p>	<p>1. Team members worked together.</p> <p>2. Team members shared ideas.</p> <p>3. Team members worked together to solve problems.</p>	<p>1. Team members worked together.</p> <p>2. Team members shared ideas and resources.</p> <p>3. Team members worked together to solve problems.</p>	<p>1. Team members worked together.</p> <p>2. Team members shared ideas and resources.</p> <p>3. Team members worked together to solve problems.</p> <p>4. Team members worked together to improve their solution.</p>
<p><b>Competition</b></p> <p>1. Team members worked together to complete the team's objectives.</p> <p>2. Team members shared ideas and resources.</p> <p>3. Team members worked together to solve problems.</p>	<p>1. Team members worked together.</p> <p>2. Team members shared ideas.</p> <p>3. Team members worked together to solve problems.</p>	<p>1. Team members worked together.</p> <p>2. Team members shared ideas and resources.</p> <p>3. Team members worked together to solve problems.</p>	<p>1. Team members worked together.</p> <p>2. Team members shared ideas and resources.</p> <p>3. Team members worked together to solve problems.</p> <p>4. Team members worked together to improve their solution.</p>
<p><b>Strengths</b></p>	<p><b>Improvements</b></p>	<p><b>Teamwork</b></p>	<p><b>Robotics Proficiency</b></p>

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Please provide as much written feedback as possible in the comments section of the rubric. Be sure to write a comment for each sub-area.

Teams will be very thankful for positive comments or well phrased "constructive" criticism that helps them improve.

## Make Comments Meaningful



- Be specific when taking notes and discussing teams
- Specific comments more helpful than impressions

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When taking notes, discussing teams, and completing rubrics, be specific and share examples or evidence that supports why the team achieved a particular evaluation. Specific comments are more helpful to teams than general impressions.

# Feedback

- Teams work hard
- Treat them with respect
- Compliment with appropriate phrases
- Compliment accomplishments or cerebral prowess
- Constructive comments
- Communicate opportunities to improve positively

"We cannot always build the future for our youth, but we can build our youth for the future"  
Franklin D. Roosevelt



When writing feedback for teams, recognize that teams work hard and treat them with respect.

Compliment the children's achievements with vocabulary appropriate for the subject matter. Make sure you positively communicate opportunities to improve. Keep all your comments constructive.

When you first meet in your judging pair, determine a system to keep detailed notes, complete rubrics, and make comments in between teams so that you'll stay on time while giving quality feedback.

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## Comment Examples



- *We liked how you showed us your team meeting agenda including activities for all three aspects of the challenge.*
- *Good description of applying FLL Core Values as participants in sports and model UN.*
- *The team notebook to capture progress toward goals shows good planning.*
- *Great division of roles – Effective use of each other’s strengths*
- *Your slogan of "Coaches guide, Kids decide" reflects kids doing the work.*
- *During the activity, the team was good about acknowledging ideas from every one.*
- *The use of rotating buddy pairs to do both robot and project work shows good Coopertition.*

Here are a few good examples of comments that cite evidence for a team at the “Accomplished” level:

*We liked how you showed us your team meeting agenda including activities for all three aspects of the challenge.*

*Great division of roles – Effective use of each other’s strengths*

*During the activity, the team was good about acknowledging ideas from every one.*

Since time is short, don’t worry too much about writing full sentences, but focus on positively conveying why you placed the team at that level.

# Core Values Rubric



Circle team strength areas

- Recognition
- Acknowledgement



FLL Core Values		Team Number	
		Judging Room	
<small>Directions: For each skill area, check the box that best describes the team's accomplishment. If the team does not demonstrate skill in a particular area, check "N" on the first box for Not Demonstrated (N/A). Please provide as many written comments as you can to acknowledge each team's hard work used to help teams progress. When you have completed the evaluation, please circle the strength for which you would like this team to be recognized.</small>			
	Improving	Developing	Accomplished
<b>Team Spirit</b>	Team members are enthusiastic and motivated to participate in the competition.	Team members are enthusiastic and motivated to participate in the competition.	Team members are enthusiastic and motivated to participate in the competition.
<b>Teamwork</b>	Team members work together to solve problems and complete tasks.	Team members work together to solve problems and complete tasks.	Team members work together to solve problems and complete tasks.
<b>Recognition</b>	Team members recognize and appreciate the contributions of others.	Team members recognize and appreciate the contributions of others.	Team members recognize and appreciate the contributions of others.
<b>Communication</b>	Team members communicate effectively with each other and the audience.	Team members communicate effectively with each other and the audience.	Team members communicate effectively with each other and the audience.
<b>Problem Solving</b>	Team members identify and solve problems effectively.	Team members identify and solve problems effectively.	Team members identify and solve problems effectively.
<b>Teamwork (continued)</b>	Team members work together to solve problems and complete tasks.	Team members work together to solve problems and complete tasks.	Team members work together to solve problems and complete tasks.
<b>Recognition (continued)</b>	Team members recognize and appreciate the contributions of others.	Team members recognize and appreciate the contributions of others.	Team members recognize and appreciate the contributions of others.
<b>Communication (continued)</b>	Team members communicate effectively with each other and the audience.	Team members communicate effectively with each other and the audience.	Team members communicate effectively with each other and the audience.
<b>Problem Solving (continued)</b>	Team members identify and solve problems effectively.	Team members identify and solve problems effectively.	Team members identify and solve problems effectively.
<b>Strengths</b>			

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At the bottom of the rubric, circle one or more areas of strength for the team. This acknowledges the team's efforts and let's them know that the judges recognized their strengths.

During initial deliberations, these strength areas may help you select teams for award nominations.

## Award Eligibility



Teams, including coaches and supporters, must display Core Values at **ALL** times.

*Egregious issue in the eyes of judging team may disqualify team from receiving awards, advancing within the region's tournament system or participating in other FLL events for the remainder of the season.*

**Core Values Input Form** allows all volunteers to have input on negative or positive observations.

As addressed in the general judge training, serious Core Values behaviors may disqualify a team from receiving awards or advancing to other FLL tournaments. Report any positive or negative Core Values observations to the Head Judge or Judge Advisor, who will determine the best course of action appropriate to the seriousness of the behavior. Core Values observations can be submitted on the Core Values Input form by any volunteer for judge consideration.



## Teams for Award Consideration



### Teams who *win* awards **stand out** from other teams. They often...

- Provide details on how they demonstrate the Core Values
- Provide concrete examples of their Core Values, including outside FLL
- Understand each team member's defined roles and responsibilities
- Mentor or assist other FLL or Jr.FLL teams

### **Avoid** nominating a team for an award if the only reason they stand out is...

- Being cute or energetic
- Good manners or politeness

*Sometimes, a great award candidate is a team who is quiet or their form of fun does not seem enjoyable to you.*

**What does a team at the “Accomplished” level look like?**  
Look at your Judge Prep Pack for a detailed example.

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So, how will you know which teams to consider for awards?

The teams who win awards will stand out from other teams. You'll see that they often: Provide details on how they demonstrate the Core values, with concrete examples, including outside of FLL.

They understand each team member's roles and responsibilities and use the roles effectively.

While not required by FLL, award winning teams will often mentor or assist other FLL or Jr.FLL teams.

Sometimes it's easy to nominate the team for an award because they were memorable for being cute, energetic, or having good manners and politeness. While teams who win awards will likely have those qualities too, look beyond their initial appeal to determine whether they have internalized and effectively used the FLL Core Values in their team.


Keep in mind that sometimes a great candidate will be the team who is quieter than others, or the way they have fun doesn't seem enjoyable to you, but they are exemplary in many aspects.

Now, what does a team at the “accomplished” level look like? Refer to your Judge Prep Pack for a detailed example of an accomplished team.

# Tools for Core Values Judges



- Core Values Judging Prep Pack
- Core Values Judging Primer
- Input from other volunteers
  - Form
- Pit visits

**Core Values Judging Primer** 

Core Values may initially seem more difficult to judge than Robot Design or Project. There is a tendency to come to consider Core Values judging to be inherently more subjective than the other two areas because "soft" or criteria such as Discovery, Inclusion and Cooperation are perceived to be difficult to obtain or use to differentiate teams. While Core Values elements may be less tangible, a number of tools and techniques exist to help judges gain insight about teams, and reinforce for all why Core Values and Core Values judging is such an important component of FLL.

As a judge, here are some overall things to consider:

- There is a tendency for teams that "practice" Core Values "operations" to be looked upon unfavorably by some judges. The premise is that these teams are just asking to score well with the judges. However, teams should practice talking about Core Values just like they practice their Project presentations and Robot mission runs. The more they practice Teamwork activities and talk about Core Values, the more they internalize these abstract ideas.
- Remember that you are evaluating how a team approaches Core Values throughout the season in addition to what they do at the tournament. The journey of the team and how much they learn and grow are important.
- Teams (including coaches, mentors, parents and others associated with the team) must uphold and display FLL Core Values at all times, not just during Core Values judging sessions.
- Information about Core Values criteria can be obtained in several ways. Many Core Values judging sessions will include a Teamwork Activity and/or Core Values Poster to help judges observe and learn about specific behaviors, as well as focus and guide the discussion and interview time more effectively.

Rubric Criteria	Primary Method of Observation	Core Values Represented
Discovery	Core Values Poster	What we discover is more important than what we win.
Team Spirit	Observation	We share our experiences with others.
Helpfulness	Core Values Poster	We have fun!
Efficiency	Teamwork Activity	We are a team.
Kick-De-Work	Teamwork Activity	We do the work to find solutions with guidance from our coaches and mentors.
Inclusion	Core Values Poster	We know our coaches and mentors don't have all the answers, we learn together.
Respect	Observation	We honor the spirit of friendly competition.
Cooperation	Core Values Poster	We display "gracious professionalism" in everything we do.

- For instances where the whole judging session is a presentation/interview/Q&A, all the information must be gathered through conversations with the team.
- When Core Values judging includes a Teamwork Activity, a great deal of information can be learned from direct observation of the team working through the activity. It is important to remember that the purpose of the activity is to observe the team working on the problem, and not to focus on the result of their work.
- When a Core Values Poster is required, it should be used as a tool to prompt a conversation between the team and the judges. It is designed to help teams focus their thoughts and examples in advance of the judging session so that they may be conveyed more easily and effectively to the judges.
- In addition to the judging sessions, many Core Values Judges like to observe the teams in their natural environments, the pits and competition area to gather additional data about all aspects of Core Values.

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You have many tools available to you as you prepare to be a Core Values judge and make awards decisions at your tournament.

After completing this training, be sure to review the Core Values Judging Prep Pack, which includes the Core Values Judging Primer. The Prep Pack contains a more in depth discussion of each rubric criteria and provides additional tips for judges. You'll want to review the rubric carefully and have a copy available as you answer the Core Values Certification questions.

During the tournament, you'll get input from other volunteers, often through the Input form, and may have the opportunity to visit teams to gather additional information. With all of these tools and guidance from the Head Judge and Judge Advisor, you'll be well prepared to select the best teams to receive Core Values awards at your tournament.



## ACTIVITY

- Review the Core Values Rubric
- Find a video of a team at a FLL Core Values Judging session.
  - *What questions would you ask the team?*
  - *Complete the rubric for the team based on what you saw.*
- If possible, ask another person to do this with you, compare notes, and complete one rubric together.

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Now is a great time for a little practice. Begin by reviewing the Core Values Rubric, available as part of the Core Values Prep Pack or on the FIRST LEGO League website.

Next, find a video of a team at a Core Values Judging session at a past tournament. You might search YouTube or other video sharing sites or use a video provided by your FLL Partner or Judge Advisor. While you watch the video, think about what questions you would ask the team. Then, complete a practice rubric for the team based on what you saw.

If possible, ask another person to review the video with you. Then pretend you're part of a judging pair with that person, compare notes and complete one rubric together as you would at a tournament.

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***FLL Volunteers  
are incredible!***



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Thank you for completing Core Values Judge Training! Be sure to answer the Certification questions in order to complete Core Values Judge Certification. You'll need to receive at least 80% to pass, but you can try again if you to.

You should now be prepared to serve as a Core Values Judge at an official *FIRST* LEGO League event. We hope you have a great time and consider volunteering for another *FIRST* event in the future.

# Contributors



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12/3/2018

FIRST LEGO League Judge Training  
Core Values

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Welcome to *FIRST* LEGO League Project Judge training.

## Objective



*After completing this part of the training...*



You will be able to assess FLL team projects and presentations.

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After this part of the training, you'll be prepared to assess FLL team projects and presentations.

## Why a Project in FLL?



- **Empowerment** to solve real-world problems
- Develop life skills
  - Divergent thinking
  - Project management
  - Time management
  - Interpersonal communication
  - Presentation skills
- Learn base knowledge required for innovation
- Personal connection with STEM topic
- Explore careers and meet professionals

*“Grown-ups never understand anything for themselves, and it is tiresome for children to be always and forever explaining things to them.”*  
Antoine de Saint-Exupery



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Project

So why do we have a project in *FIRST* LEGO League?

In order to tackle a real-world problem, you need to feel like you have a realistic shot at being successful. The *FIRST* LEGO League project guides youth through the process of working to solve a real-world problem. We believe FLL kids are more likely to go out and make changes in the world, because they'll going to feel empowered to try.

Working on the FLL project develops a wide range of life skills, including divergent thinking, project management, time management, interpersonal communication, and presentation skills.

By working on the project, FLL team members learn the science behind the challenge. It's important to have basic knowledge when working toward innovation in any field. The project also develops a person connection with the Challenge topic and gives youth the opportunity to explore careers and meet professionals in related fields.



# Find the Project



<http://www.firstlegoleague.org/challenge/thechallenge>

The FLL Challenge has 3 parts - the Robot Game, the Project, and the Core Values.  
[Download Welcome to the Season, Part 1 video](#)

**Robot Game and Project**  
 [Download Challenge](#)  
Includes: Project, Robot Game (Field Setup, Missions, Rules)

**Core Values**  
[Learn about the FLL Core Values](#)

**Supplemental Materials**

- **Project**
  - [Project Video](#) (YouTube version)- Project Manager, Jinnel Choiniere, reviews the access YouTube? [Download the video.](#)
  - [Project FAQs](#) - This page is the first place to go for answers to Project questions Challenge document. You should also visit here often for answers to questions because the postings here contain official information that will be in effect at to



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The Project is posted each year as part of the FLL Challenge.

Teams find the Challenge document on the *FIRST* LEGO League website. Sometimes, important Project questions come up throughout the season. Those questions are posted with the Challenge as Project Updates, in a similar format as Robot Game updates.

As you read the Challenge document, pay close attention to what's stated as a requirement. Anything that is not specifically required is considered guidance for teams on how to go about the project. Except for required items, you'll find that each team approaches the challenge a little bit differently.

## Season-Specific Requirements



Season-specific requirements will vary

- Some seasons won't have any season-specific requirements
- Any requirements will be clearly stated in the Challenge

### What happens if a team doesn't follow the season-specific requirements?

- Judge should write a comment on the team's rubric under Research, as they did not identify the problem within the Challenge requirements.
- Team is **not eligible** for Project Awards or Champions Awards
- Team is **not eligible** to advance



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Sometimes there is a season-specific requirement. For example, in the Power Puzzle Challenge, teams were required to complete an energy audit. In the Senior Solutions Challenge, each team was required to find a senior partner. The Challenge document will specifically state if any season-specific instructions are requirements or just suggested procedures to tackle the Project.

While there's not a place on the rubric to track completion of season-specific requirements, keep note when teams do not meet them.

Occasionally, a team won't follow the season specific requirements. If this happens, be sure to comment on the team's rubric under Research, as they did not identify the problem within the scope of the Challenge. The team also won't be eligible for Project Awards, Champions Awards, or to advance.

# Project Presentations



Minimum 10 minute session in separate judging area

- 5 minute maximum for presentation
  - Uninterrupted
  - Includes setup
- 5 minutes minimum for judge questions

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Each Project judging session will last at least 10 minutes and will be held in a designated area. Teams are allowed 5 uninterrupted minutes, including set up time, for their presentation. You'll then have the remaining minutes to ask questions.

# Project Presentations



Teams may

- Perform a skit
- Present PowerPoint slides
- Sing a song
- Present their projects in any creative way



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When teams give their presentations, you'll see teams who perform skits, give formal PowerPoint presentations, sing songs, or present in many other creative ways.

# Project Presentations



Teams must complete and demonstrate all requirements

- ➔ Identify a real-world problem
- ➔ Create an innovative solution
  - Solution does **not** need to be technical or technology based
- ➔ Share their research and solution



*Make sure to ask about any requirements not addressed in presentation.*

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Whatever the format of the presentation, teams should complete and demonstrate all three parts of the Project.

They must identify a real-world problem and then create an innovative solution. The solution does not need to be technical or include designing a new piece of technology. Some of the most innovative projects do not involve technological solutions. Teams must also tell the judges with whom they shared their research and solution.

The best teams will include all three parts of the project, including sharing, in their presentation. Be ready to ask if the team leaves out any part of the project from their presentation. It's okay to evaluate the team lower under presentation if they didn't include all three parts.

# Asking Project Questions



Ask questions that help you complete the rubric.

**Problem Analysis:** *How did your team organize and use your research?*

**Implementation:**  
*What resources would you need to develop your solution?*

**Sharing:** *How did you share your project?*



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As you decide what questions to ask, choose those which will help you complete the rubric. Be sure to ask about any items on the rubric if you need more information.

As mentioned in the general FLL Judge training, good questions are open ended, contain only one idea, and lead the team to provide the information you need. Word the questions positively and avoid questions that try to catch teams with some aspect of their project they haven't considered. A few good questions are "How did your team organize and use your research?" "What resources would you need to develop your solution?" and "How did you share your project?"

Refer to the Judge Prep pack for a helpful list of sample questions. Consider making a list of standard questions you'll ask every team, but also be ready to ask each team the right questions to help you complete the rubric.

# Project Judging



- Research**
  - Problem Identification
  - Sources of Information
  - Problem Analysis
  - Review Existing Solutions
- Innovative Solution**
  - Team Solution
  - Innovation
  - Implementation
- Presentation**
  - Presentation Effectiveness
  - Creativity
  - Sharing

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Project

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The *FIRST* LEGO League Project rubric represents a set of criteria on which to evaluate teams' projects.

The rubric is divided into 3 skill areas:  
Research;  
Innovative Solution; and  
Presentation.

Each team should be judged on the information that they provide in the Judging room, rather than information from another source.

# Project Judging



PROJECT



## Research

### Problem Identification

- Well defined problem statement

### Sources of Information

- Quality, variety, and number of sources

### Problem Analysis

- Sufficient to form own conclusions

### Review Existing Solutions

- Shows effort to determine originality

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Research includes Problem Identification, Sources of Information, Problem Analysis, and Review of Existing Solutions.

In Problem Identification, look for a well-defined problem statement.

When evaluating a team's Sources of Information, look for quality, variety and number of sources.

Under Problem Analysis, look for teams performing their own analysis to form their own conclusions.

For Review of Existing Solutions, teams should demonstrate a good faith effort to confirm that their solution is original.



# Project Judging



PROJECT



## Innovative Solution

### Team Solution

- Clearly states how solution solves problem (does not need to be technical)

### Innovation

- Improves existing options, new application of existing ideas, or new solution

### Implementation

- Considered cost, ease of manufacturing, new inventions needed, etc.

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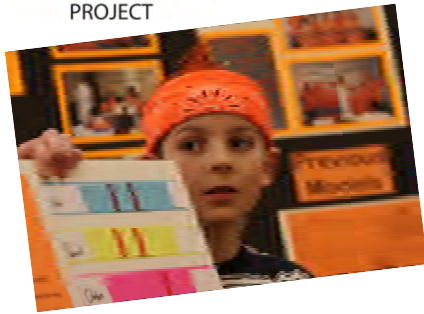
12

Innovative Solution includes the team's solution, Innovation, and implementation. When evaluating a team's solution, focus on the team's way to solve the identified problem

Under Innovation, is the team's solution something new (or new to the team) and something that improves existing options, applies existing ideas in a new way, or something entirely different?

For Implementation, teams should have considered the cost, ease of manufacturing, and any new inventions that would be needed to implement their solution. Prototypes are examples at the exemplary level.

# Project Judging



## Presentation

### Presentation Effectiveness

- Well-organized, clear, includes all parts of the project

### Creativity

- Entertaining and engaging

### Sharing

- Who will benefit

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Presentation includes the presentation's effectiveness, creativity, and sharing.

In order for a Presentation to be effective, it should be well organized and clearly delivered.

For Creativity, was the presentation engaging? Did it make you want to hear more about the topic?

Under Sharing, did team share their solution with those who might benefit? Did they go beyond their comfort zone to share with people they don't know? Keep in mind that those who will benefit will be different each season.

# Project Rubric



Research  
 Innovative Solution  
 Presentation

FLL Project		Team Number	
		Judging Room	
<p><b>Directions:</b> For each skill area, clearly mark the box that best describes the team's accomplishment. If the team does not demonstrate skill in a particular area, there just an "X" in the first box for that demonstrated skill. Please provide as many written comments as you can for acknowledge each team's hard work and to help teams improve. When you have completed the evaluation, please circle the awards for which you would like this team to be considered.</p>			
		Beginning	Developing
		Accomplished	Exemplary
<b>Problem Identification</b> <small>Problem Identification</small>	<b>Problem Identification</b> Clear definition of the problem being studied	Clear definition of the problem being studied	Clear definition of the problem being studied
	Unclear, few details	Partially clear, details missing	Nearly clear, detailed
	Clear, but lacks important details	Clear, but lacks important details	Clear, but lacks important details
	Clear, but lacks important details	Clear, but lacks important details	Clear, but lacks important details
<b>Problem Analysis</b> <small>Problem Analysis</small>	<b>Problem Analysis</b> Depth to which the problem was studied and analyzed by the team	Depth to which the problem was studied and analyzed by the team	Depth to which the problem was studied and analyzed by the team
	Minimal analysis, no team analysis	Minimal analysis, no team analysis	Minimal analysis, no team analysis
	Minimal analysis, no team analysis	Minimal analysis, no team analysis	Minimal analysis, no team analysis
	Minimal analysis, no team analysis	Minimal analysis, no team analysis	Minimal analysis, no team analysis
<b>Team Solution</b> <small>Team Solution</small>	<b>Team Solution</b> Clear explanation of the proposed solution	Clear explanation of the proposed solution	Clear explanation of the proposed solution
	Difficult to understand	Some parts confusing	Understandable
	Degree to which the team solution addresses the problem or improves existing systems, identifying a new solution or existing solution	Addressing/explaining current	Addressing/explaining current
	Addressing/explaining current	Addressing/explaining current	Addressing/explaining current
<b>Implementation</b> <small>Implementation</small>	<b>Implementation</b> Consideration of factors for implementation (cost, ease of manufacturing, etc.)	Consideration of factors for implementation (cost, ease of manufacturing, etc.)	Consideration of factors for implementation (cost, ease of manufacturing, etc.)
	Minimal factors considered	Some factors considered	Addressing/explaining current
	Addressing/explaining current	Addressing/explaining current	Addressing/explaining current
	Addressing/explaining current	Addressing/explaining current	Addressing/explaining current
<b>Sharing</b> <small>Sharing</small>	<b>Sharing</b> Degree to which the team shared their project before the tournament with others who might benefit from the team's efforts	Degree to which the team shared their project before the tournament with others who might benefit from the team's efforts	Degree to which the team shared their project before the tournament with others who might benefit from the team's efforts
	Shared with one individual	Shared with one group	Shared with one individual or group
	Shared with one individual or group	Shared with one individual or group	Shared with one individual or group
	Shared with one individual or group	Shared with one individual or group	Shared with one individual or group
<b>Creativity</b> <small>Creativity</small>	<b>Creativity</b> Originality and ingenuity of the presentation	Originality and ingenuity of the presentation	Originality and ingenuity of the presentation
	Minimally engaging OR	Engaging OR	Engaging OR
	Engaging OR	Engaging OR	Engaging OR
	Engaging OR	Engaging OR	Engaging OR
<b>Presentation Effectiveness</b> <small>Presentation Effectiveness</small>	<b>Presentation Effectiveness</b> Message delivery and organization of the presentation	Message delivery and organization of the presentation	Message delivery and organization of the presentation
	Minimal OR disorganized	Partially clear, minimal organization	Clearly clear, mostly organized
	Partially clear, minimal organization	Clearly clear, mostly organized	Clearly clear, mostly organized
	Clearly clear, mostly organized	Clearly clear, mostly organized	Clearly clear, mostly organized
<b>Strengths:</b>			
Research		Innovative Solution	
Presentation		Presentation	

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The rubric is divided into the three Project sub areas.

# Project Rubric



Judges evaluate team performance in each rubric criteria

ND = "Not Demonstrated"

FLL FIRST LEGO League		Project	Team Number Judging Room			
Directions: For each skill area, clearly mark the box that best describes the team's accomplishments. If the team does not demonstrate skill in a particular area, then put an "X" in the first box for Not Demonstrated (ND). Please provide as many written comments as you can to acknowledge each team's hard work and to help teams improve. When you have completed the evaluation, give the awards for which you would like this team to be considered.						
		Beginning	Developing	Accomplished	Exemplary	
<b>Problem Identification</b>		Clear definition of the problem being studied				
N	unclear; few details	some what clear; details missing	clear; detailed	very clear; very detailed		
D						
<b>Sources of Information</b>		Types (e.g. books, magazines, websites, reports and other resources) and number of quality sources cited, including professionals in the field				
N	one type of information cited; minimal sources	two types of information cited; several sources	three types of information cited; many sources, including professionals	four or more types of information cited; extensive sources, incl. professionals		
D						
<b>Problem Analysis</b>		Depth to which the problem was studied and analyzed by the team				
N	minimal study; no team analysis	minimal study; some team analysis	sufficient study and analysis by team	extensive study and analysis by team		
D						
<b>Review Existing Solutions</b>		Extent to which existing theories and solutions were analyzed by the team, including an effort to verify the originality of the team's solution				
N	minimal review; no team analysis	minimal review; some team analysis	sufficient review and analysis by team	extensive review and analysis by team		
D						
Comments:						
<b>Team Solution</b>		Clear explanation of the proposed solution				
N	difficult to understand	some parts confusing	understandable	easy to understand by all		
D						

As a judge, you'll evaluate team performance in each rubric criteria. From beginning to exemplary, each rubric area specifies the team behavior you should see at that level. You can mark "ND" for "Not Demonstrated" if the team doesn't provide any information to help you assess what they did.

In FLL, we'd like every team to strive for the "Accomplished" level. One approach to evaluating a team is to start by assuming they are accomplished, then adjust their evaluation based on the team's performance.

# Project Rubric



Judges' Comments are very important to teams. Constructive feedback helps teams grow.



FLL Project		Team Number	
Judging Room		Judging Room	
Directions: For each skill area, clearly mark the box that best describes the team's accomplishment. If the team does not demonstrate skill in a particular area, then put an "X" in the first box for that developmental skill. Please provide as many written comments as you can to acknowledge each team's hard work and to help teams improve. When you have completed the evaluation, please check the number for which you would like this team to be awarded.			
		Beginning	Developing
Research	<b>Problem Identification</b>	Clear definition of the problem being studied.	Initial team decision.
	<b>Sources of Information</b>	Points to key sources, magazines, websites, history and other resources and location of quality sources used, including acknowledgment of the team.	Initial team decision.
	<b>Problem Analysis</b>	Search to which the problem was studied and analyzed to the team.	Initial team decision.
	<b>Review Existing Solutions</b>	Search to review existing solutions and to understand the team's solution including an effort to verify the feasibility of the team's solution.	Initial team decision.
Invention	<b>Team Solution</b>	Clear explanation of the proposed solution.	Initial team decision.
	<b>Feasibility</b>	Clear explanation of the proposed solution.	Initial team decision.
	<b>Implementation</b>	Clear explanation of the proposed solution.	Initial team decision.
	<b>Review Existing Solutions</b>	Search to review existing solutions and to understand the team's solution including an effort to verify the feasibility of the team's solution.	Initial team decision.
Presentation	<b>Display</b>	Display to which the team showed their project before the competition with others who judge.	Initial team decision.
	<b>Creativity</b>	Imagination used to develop and utilize the presentation.	Initial team decision.
	<b>Teamwork</b>	Teamwork used to develop and utilize the presentation.	Initial team decision.
	<b>Organization</b>	Organization used to develop and utilize the presentation.	Initial team decision.
<b>Strengths</b>		<b>Research</b>	<b>Inventive Solution</b>
		<b>Presentation</b>	

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Please provide as much written feedback as possible in the comments section of the rubric. Be sure to write a comment for each sub-area.

Teams will be very thankful for any positive comments or well phrased "constructive" criticism that helps them improve.

## Make Comments Meaningful



- Be specific when taking notes and discussing teams
- Specific comments more helpful than impressions



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When taking notes, discussing teams, and completing rubrics, be specific and share examples or evidence that supports why the team achieved a particular evaluation. Specific comments are more helpful to teams than general impressions.

# Feedback



- Constructive comments
- Teams work hard
- Treat them with respect
- Compliment with appropriate phrases
- Compliment accomplishments or cerebral prowess
- Communicate opportunities to improve positively
- Give specific evidence

"We cannot always build the future for our youth, but we can build our youth for the future"  
Franklin D. Roosevelt



When writing feedback for teams, recognize that teams work hard and treat them with respect.

Compliment the children's achievements with vocabulary appropriate for the subject matter. Make sure you positively communicate opportunities to improve. Keep all your comments constructive.

When you first meet in your judging pair, determine a system to keep detailed notes, complete rubrics, and make comments in between teams so that you'll stay on time while giving quality feedback.

## Comment Examples



- *Your diagram helped us understand the problem you were studying.*
- *Good use of sources - journal articles, university professors, and field trips.*
- *The flip chart showed us how your solution would work.*
- *Good consideration of cost and materials, would have liked to see more about durability of the device.*
- *We appreciated that you shared with the firefighters who might benefit from quicker communications.*
- *Using lines from pop songs to present your project solution was imaginative.*

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Project

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Here are a few good examples of comments that cite evidence for a team at the “Accomplished” level:

- *Good use of sources - journal articles, university professors, and field trips.*
- *Good consideration of cost and materials, would have liked to see more about durability of the device.*
- *We appreciated that you shared with the firefighters who might benefit from quicker communications.*

Since time is short, don’t worry too much about writing full sentences, but focus on positively conveying why you placed the team at that level.



# Project Rubric



Circle team strength areas

- Recognition
- Acknowledgement



FLL Project		Team Number		
		Judging Room		
Directions: For each FLL area, clearly mark the box that best describes the team's accomplishment. If the team does not demonstrate skill in a particular area, then put an "X" in the box for Not Demonstrated (ND). Please provide as many written comments as you can to acknowledge each team's hard work and to help teams improve. What you have completed the evaluation, please circle the strength for which you award the star team for the competition.				
	Beginning	Developing	Accomplished	Exemplary
Research	<b>Problem Identification</b> - Clear definition of the problem being solved			
	1. Initial task details	2. Initial task details	3. Initial task details	4. Initial task details
Research	<b>Search for Information</b> - Team's research, analysis, reports and other resources and number of quality sources used, including references to the field			
	1. Use type of information	2. Use type of information	3. Use type of information	4. Use type of information
Research	<b>Problem Analysis</b> - Depth to which the problem was studied and analyzed by the team			
	1. Problem analysis or report	2. Problem analysis or report	3. Problem analysis or report	4. Problem analysis or report
Research	<b>Review Existing Solutions</b> - Extent to which existing solutions were analyzed by the team, including analysis of the strengths and weaknesses of the team's solution			
	1. Analyzed existing solutions	2. Analyzed existing solutions	3. Analyzed existing solutions	4. Analyzed existing solutions
Design	<b>Team Solution</b> - Other explanation of the proposed solution			
	1. Difficult to understand	2. Some parts confusing	3. Understandable	4. Easy to understand by all
Design	<b>Feasibility</b> - Degree to which the team's solution is able to be implemented, including a clear definition of testing time, training for problem, a completed prototype			
	1. Meeting work/requirements	2. Meeting work/requirements	3. Meeting work/requirements	4. Meeting work/requirements
Design	<b>Implementation</b> - Consideration of factors for implementation (cost, access, manufacturability, etc.)			
	1. Minimal factors considered	2. Some factors considered	3. Several factors considered	4. All factors considered
Presentation	<b>Timing</b> - Degree to which the team showed their project before the competition with sufficient time to benefit from the judges' efforts			
	1. Timed with one audience	2. Timed with one audience	3. Timed with one audience	4. Timed with one audience
Presentation	<b>Creativity</b> - Imagination used to describe and define the presentation			
	1. Creatively designed the	2. Creatively designed the	3. Creatively designed the	4. Creatively designed the
Presentation	<b>Organization/Structure</b> - Clarity and organization of the presentation			
	1. Organized the message	2. Organized the message	3. Organized the message	4. Organized the message
<b>Strengths:</b> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Research</span> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Innovative Solution</span> <span style="border: 1px solid black; border-radius: 50%; padding: 2px;">Presentation</span>				

FIRST® LEGO® League Judge Training Project

At the bottom of the rubric, circle one or more areas of strength for the team. This acknowledges the team's efforts and let's them know that the judges recognized their strengths.

During initial deliberations, these strength areas may help you select teams for award nominations.

## Award Eligibility



### Live presentation

- A/V may be used as an enhancement only
- Teams may not simply “plug and play”



### Complete all Project requirements

### Demonstrate FLL Core Values

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In addition to the requirements stated in the Project document, in order to be eligible for Project awards, teams must give a live presentation. Audio visuals, including videos, may be used as enhancement only – teams may not “plug and play” for their presentation.

As always, teams must demonstrate FLL Core Values. Teams receive instructions that team members should do all the set up for their presentation. When adults help with set up, while not ideal, there is often a good reason, like the props are large or heavy. Any adult behavior that seems like it might be part of a larger concern about adult intervention should be reported to the Judge Advisor.

## Teams for Award Consideration



### Teams who *win* awards stand out from other teams. They often...

- Collaborate extensively with professionals
- Research alternative solutions and explain why their solution is better
- Collect their own data to support or test their problem or solution
- Explain all three parts of the project, including sharing, in their presentation

### Avoid nominating a team for an award if the only reason they stand out is...

- A large research notebook (Quality, quantity, and variety are all important)
- An energetic or cute presentation

*Sometimes, a great award candidate is a team with a solution that is low or no tech.*

### What does a team at the “Accomplished” level look like?

Look at your Judge Prep Pack for a detailed example.

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So, how will you know which teams to consider for awards?

The teams who win awards will stand out from other teams. You’ll see that they often:  
 Collaborate extensively with adult professionals in fields related to their project  
 Research alternative solutions to their problem and explain why their solution is better  
 Collect their own data through surveys or experiments to support or test their problem or solution  
 Explain all three parts of the project, including sharing, in their presentation

Sometimes it’s easy to nominate the team for an award because they were memorable for their large research notebook, or having an energetic or cute presentation. While teams who win awards might have those qualities too, look beyond their initial appeal to determine whether they had quality and variety among their sources and were outstanding in other Project sub-areas.

Keep in mind that sometimes a great candidate for an award will be a team whose solution doesn’t include any technology.

Now, what does a team at the “accomplished” level look like? Refer to your Judge Prep Pack for a detailed example of an accomplished team.

# Tools for Project Judges



- Project Judging Prep Pack
- Project Judging Primer
- The Challenge document
- FLL Project Updates
- [fillprojects@usfirst.org](mailto:fillprojects@usfirst.org)





You have many tools available to you as you prepare to be a Project judge and make awards decisions at the tournament.

After completing this training, be sure to review the Project Judging Prep Pack, which includes the Project Judging Primer. The Prep Pack contains a more in depth discussion of each rubric criteria and provides additional tips for judges. You'll want to review the rubric carefully and have a copy available as you answer the Project Certification questions.

The Project Judging Prep Pack includes the Challenge document for each season. It's also available on the FIRST LEGO League website. Be sure to check the FLL Project Updates on the website before attending your tournament.

If you have any questions about the Project challenge, you're welcome to email [fillprojects@usfirst.org](mailto:fillprojects@usfirst.org)

With all of these tools and guidance from the Head Judge and Judge Advisor, you'll be well prepared to select the best teams to receive Project awards at your tournament.



## ACTIVITY

- Review the FLL Project Rubric
- Find a video of a team at a FLL Project Judging session.
  - *What questions would you ask the team?*
  - *Complete the rubric for the team based on what you saw.*
- If possible, ask another person to do this with you, compare notes, and complete one rubric together.

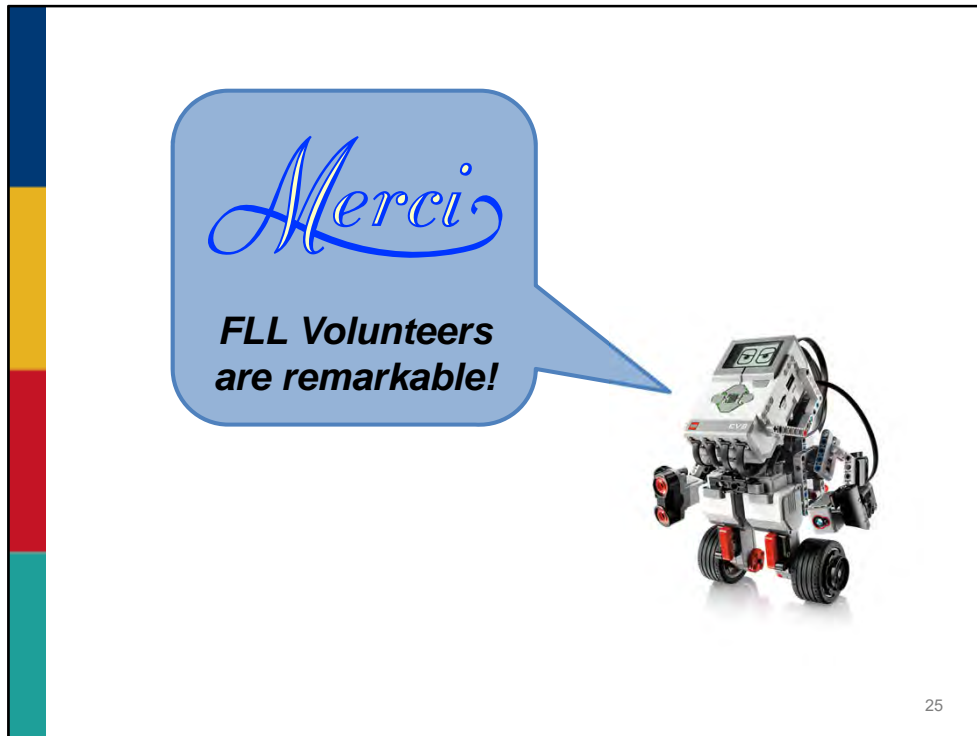
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Now is a great time for a little practice. Begin by reviewing the Project Rubric, available as part of the Project Prep Pack or the FIRST LEGO League website.

Next, find a video of a team at a Project Judging session at a past tournament. You might search YouTube or other video sharing sites or use a video provided by your FLL Partner or Judge Advisor. While you watch the video, think about what questions you would ask the team. Then, complete a practice rubric for the team based on what you saw.

If possible, ask another person to review the video with you. Then pretend you're part of a judging pair with that person, compare notes and complete one rubric together as you would at a tournament.



Thank you for completing Project Judge Training! Be sure to answer the Certification questions in order to complete Project Judge Certification. You'll need to receive at least 80% to pass, but you can try again if you need to do so.

You should now be prepared to serve as a Project Judge at an official *FIRST* LEGO League event. We hope you have a great time and consider volunteering for another *FIRST* event in the future.

# Contributors



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12/3/2018

FIRST LEGO League Judge Training  
Project

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Welcome to *FIRST* LEGO League Robot Design Judge Training.



## Objective



*After completing this part of the training...*



You will be able to judge FLL team robot designs.

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This part of the training will prepare you to judge FLL team robots and their design processes.

# Robot Game Missions



Rules, missions, and Robot Game Updates are available at

<http://www.firstlegoleague.org/challenge/thechallenge>

The FLL Challenge has 3 parts - the Robot Game, the Project, and the Core Values.

[Download Welcome to the Season, Part 1 video](#)

#### Robot Game and Project

 [Download Challenge](#)

Includes: Project, Robot Game (Field Setup, Missions, Rules)

#### Core Values

[Learn about the FLL Core Values](#)

#### Supplemental Materials

- **Project**

- [Project Video](#) (YouTube version)- Project Manager, Jinnel Choiniere, reviews the access YouTube? [Download the video](#).

- [Project FAQs](#) - This page is the first place to go for answers to Project questions. [Challenge document](#). You should also visit here often for answers to questions.

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The Robot Game often generates the most attention of all the components of *FIRST* LEGO League. Robot Design Judges need to be familiar with the Robot Game rules, missions, and Updates that are regularly posted throughout the season. Teams and Judges can find the Challenge on the *FIRST* LEGO League website. The full Robot Game Challenge document is also included in the Robot Design Judge Prep Pack.

## Robot Design Judging



Minimum 10 minute interview/discussion

Separate judging area including a Robot Game table and Field Setup Kit

Teams interact with judges to demonstrate:

- Design process, choices, and final design
- Programming
- Competition strategies
- Technical knowledge, including robot design, programming and efficiency

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The Robot Design Judging session is a design review. The teams have spent the season designing their robot to accomplish this year's challenge. The judging session will last at least 10 minutes and take place in a separate judging area. The judging area should include a Robot Game Table with a Field Set Up Kit.

During the judging sessions, teams will demonstrate their design process, programming, strategies, and technical knowledge.

## Robot Design Judging



- Presentation (*optional*)
  - Robot Design Executive Summary
- Demo Robot Game Mission (*not required*)
- Questions and Answers



*Each team must be judged together instead of separating the programmers from the rest of the team.*

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During the Robot Design judging sessions, teams will often begin with a presentation. In many regions, the teams may prepare a Robot Design Executive Summary and present it at the beginning of the session. A great way to begin the Robot Design session is to ask teams if they have a presentation to share. If not, you might start by asking “tell me about your robot.”

Teams may, at their choice, demonstrate at least one Robot Game Mission during the Robot Design session. It’s not important by itself whether the mission is successful. Teams often find that the Robot Game tables in judging rooms are not as high quality as official game tables and their robots don’t perform the same as they will on the official tables or during practices. Instead, watching the robot allows you to gain information about how the robot moves, whether the mechanics work as intended, balance of speed and power, and other factors.

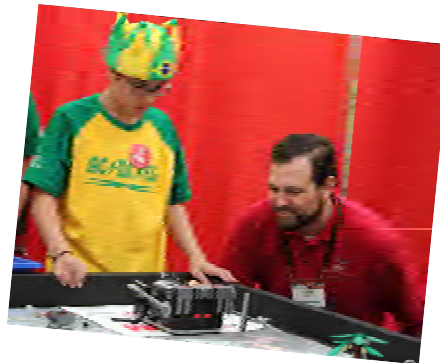
Finish the judging session by asking teams questions to learn more about their robot or design process. If teams do have a presentation, it’s best to not interrupt them with questions.

Although it may seem tempting to separate the team into programmers and builders, FLL teams should be judged all together.

## Robot Design Executive Summary



- Short presentation (< 4 min)
  - Robot Facts
  - Design Details
  - Trial Run
- Written copy / handout **not** required



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The FLL Partner for each region decides whether teams will be required to present a Robot Design Executive Summary. If it's used in your area, be sure to review the instructions provided to teams, so you'll know what to expect. Like the Core Values Poster, the Robot Design Executive Summary is intended to serve as a tool for teams to communicate information to judges.

Robot Design Executive Summaries consist of a short presentation, less than 4 minutes long. It should include Robot Facts and Design Details, and end with a trial run of a Robot Game Mission. Teams are NOT required to provide a written copy or other handout.

## Asking Robot Design Questions



Ask questions that help you complete the rubric.

**Durability:** *How did you get your robot to stay together?*

**Programming Efficiency:**

*What did you do to make your programs understandable and easy to use?*

**Innovation:** *What part of your design do you think is unique to your team?*




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As you decide what questions to ask, choose those which will help you complete the rubric. Be sure to ask about any items on the rubric if you need more information.


As mentioned in the general FLL Judge training, good questions are open ended, contain only one idea, and lead the team to provide the information you need. A few good questions are “How did you get your robot to stay together?” “What did you do make your programs understandable and easy to use?” and “What part of your design do you think is unique to your team?”

Refer to the Judge Prep pack for a helpful list of sample questions. Consider making a list of standard questions you’ll ask every team, but also be ready to ask each team the right questions to help you complete the rubric.



## Robot Design - Judged Areas

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**Mechanical Design**

- Durability
- Mechanical Efficiency
- Mechanization

**Programming**

- Programming Quality
- Programming Efficiency
- Automation/Navigation

**Strategy and Innovation**

- Design Process
- Mission Strategy
- Innovation

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The *FIRST* LEGO League Robot Design rubric represents a set of criteria on which to evaluate teams' robots and design processes.

The rubric is divided into 3 skill areas:  
 Mechanical Design;  
 Programming; and  
 Strategy and Innovation.

Each team should be judged on the information that they provide in the Judging room, rather than information from another source.

While each rubric criteria is equally weighted, they are interdependent. For example, a durable, simple design should be considered better than one that is highly innovative but fragile.

## Robot Design – Mechanical Design



### Durability

Pieces don't break off on impact

### Mechanical Efficiency

High ratio of results-per-piece

### Mechanization

Effective mechanical components



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Mechanical Design covers Durability, Mechanical Efficiency and Mechanization.

For Durability, Robots should be able to withstand the rigors on the field without having pieces break off on contact.

Under Mechanical Efficiency, Robot structures and attachments should show a judicious use of parts. However, do not penalize teams for adding small bits of “flair”. Remember the core value “We have fun!”

In Mechanization, look for effective mechanical components that balance speed and power.



## Robot Design – Programming



### Programming Quality

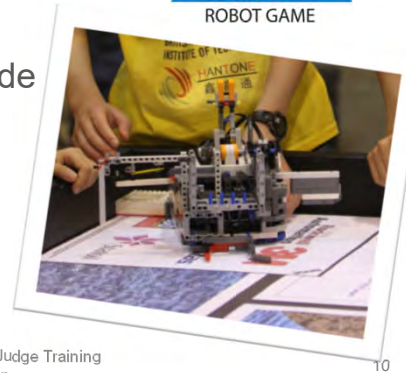
Performs consistently

### Programming Efficiency

Modular, portable, flexible code

### Automation/Navigation

Minimal driver intervention



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Programming covers programming quality, efficiency, automation/Navigation.

Programming quality is judged by how consistently the robot performs. Examples would be audible checks or a simplified menu system that teams use to organize the sections of code that they need for specific missions.

In Programming Efficiency, the goal is to encourage teams to develop modular code. Look for code that is portable, flexible and reusable.

Automation/Navigation means that the robot operates with minimal drive intervention. A prudent use of sensors is much more efficient than physically pointing the robot at a target.

## Robot Design – Strategy and Innovation



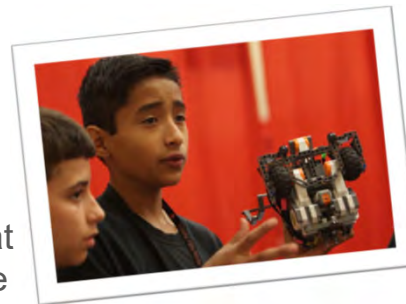
### Design Process

Beyond trial and error - Utilizing testing & feedback cycles



### Mission Strategy

What choices were made while deciding your strategy?



### Innovation

Creativity or uniqueness that improves robot performance

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Strategy and Innovation includes design process, mission strategy and innovation.

In Design process, judges should look for teams to explain their development cycles. Use of testing cycles where systematic processes are used is better than trial and error.

Mission Strategy is fairly straightforward. Determine whether the team has set goals and considered balancing risk and reward in their strategy.

Innovation is often a hard area to judge. Judges need to be on the lookout for creativity, uniqueness, cool attachments or programming tricks. Remember, innovation includes adding benefits, so make sure that the team can state the benefits of their cool feature. Innovation should be judged relative to the other teams at your tournament – it's okay if you've seen the design elsewhere if it's used in a different way than other teams at your tournament.

# Robot Design Rubric



Mechanical Design →

Programming →

Strategy and Innovation →

FLL Robot Design		Team Number	
FIRST LEGO League		Judging Room	
<p>Directions for each skill area, clearly mark the box that best describes the team's accomplishments. If the team does not demonstrate skill in a particular area, mark "N" in the first box for that sub-area (100). These provided as they are often considered as the core to the knowledge each team's had work with in the previous program. When you have completed the evaluation, please check the awards for which you would like this team to be considered.</p>			
		Beginning	Developing
		Accomplished	Exemplary
Mechanical Design	<p><b>Feasibility</b></p> <p>1. Is the robot feasible to build?</p> <p>2. Is the robot feasible to build?</p>	<p>1. Feasible to build with minimal modifications.</p> <p>2. Feasible to build with minimal modifications.</p>	<p>1. Feasible to build with minimal modifications.</p> <p>2. Feasible to build with minimal modifications.</p>
	<p><b>Mechanical Efficiency</b></p> <p>1. Efficient use of parts and time.</p> <p>2. Efficient use of parts and time.</p>	<p>1. Efficient use of parts and time.</p> <p>2. Efficient use of parts and time.</p>	<p>1. Efficient use of parts and time.</p> <p>2. Efficient use of parts and time.</p>
	<p><b>Mechanical Innovation</b></p> <p>1. Ability of novel mechanisms to solve a problem.</p> <p>2. Ability of novel mechanisms to solve a problem.</p>	<p>1. Ability of novel mechanisms to solve a problem.</p> <p>2. Ability of novel mechanisms to solve a problem.</p>	<p>1. Ability of novel mechanisms to solve a problem.</p> <p>2. Ability of novel mechanisms to solve a problem.</p>
	<p><b>Mechanical Reliability</b></p> <p>1. Reliability of design, construction, and assembly.</p> <p>2. Reliability of design, construction, and assembly.</p>	<p>1. Reliability of design, construction, and assembly.</p> <p>2. Reliability of design, construction, and assembly.</p>	<p>1. Reliability of design, construction, and assembly.</p> <p>2. Reliability of design, construction, and assembly.</p>
Programming	<p><b>Programming Feasibility</b></p> <p>1. Feasible to program.</p> <p>2. Feasible to program.</p>	<p>1. Feasible to program.</p> <p>2. Feasible to program.</p>	<p>1. Feasible to program.</p> <p>2. Feasible to program.</p>
	<p><b>Programming Efficiency</b></p> <p>1. Efficient use of code.</p> <p>2. Efficient use of code.</p>	<p>1. Efficient use of code.</p> <p>2. Efficient use of code.</p>	<p>1. Efficient use of code.</p> <p>2. Efficient use of code.</p>
	<p><b>Programming Innovation</b></p> <p>1. Ability of novel programs to solve a problem.</p> <p>2. Ability of novel programs to solve a problem.</p>	<p>1. Ability of novel programs to solve a problem.</p> <p>2. Ability of novel programs to solve a problem.</p>	<p>1. Ability of novel programs to solve a problem.</p> <p>2. Ability of novel programs to solve a problem.</p>
	<p><b>Programming Reliability</b></p> <p>1. Reliability of program.</p> <p>2. Reliability of program.</p>	<p>1. Reliability of program.</p> <p>2. Reliability of program.</p>	<p>1. Reliability of program.</p> <p>2. Reliability of program.</p>
Strategy & Innovation	<p><b>Design Process</b></p> <p>1. Ability to design and explain the design process.</p> <p>2. Ability to design and explain the design process.</p>	<p>1. Ability to design and explain the design process.</p> <p>2. Ability to design and explain the design process.</p>	<p>1. Ability to design and explain the design process.</p> <p>2. Ability to design and explain the design process.</p>
	<p><b>Mechanical Innovation</b></p> <p>1. Ability of novel mechanisms to solve a problem.</p> <p>2. Ability of novel mechanisms to solve a problem.</p>	<p>1. Ability of novel mechanisms to solve a problem.</p> <p>2. Ability of novel mechanisms to solve a problem.</p>	<p>1. Ability of novel mechanisms to solve a problem.</p> <p>2. Ability of novel mechanisms to solve a problem.</p>
	<p><b>Programming Innovation</b></p> <p>1. Ability of novel programs to solve a problem.</p> <p>2. Ability of novel programs to solve a problem.</p>	<p>1. Ability of novel programs to solve a problem.</p> <p>2. Ability of novel programs to solve a problem.</p>	<p>1. Ability of novel programs to solve a problem.</p> <p>2. Ability of novel programs to solve a problem.</p>
	<p><b>Strategy &amp; Innovation</b></p> <p>1. Ability to design and explain the design process.</p> <p>2. Ability to design and explain the design process.</p>	<p>1. Ability to design and explain the design process.</p> <p>2. Ability to design and explain the design process.</p>	<p>1. Ability to design and explain the design process.</p> <p>2. Ability to design and explain the design process.</p>
<p><b>Strengths:</b> Mechanical Design      Programming      Strategy &amp; Innovation</p>			

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The rubric is divided into the three Robot Design sub-areas.

# Robot Design Rubric



Judges evaluate team performance in each rubric criteria

ND = "Not Demonstrated"

**FLL Robot Design** **Team Number**  
**FIRST LEGO League** **Judging Room**

Directions: For each skill area, clearly mark the box that best describes the team's accomplishments. If the team does not demonstrate skill in a particular area, then put an "X" in the first box for Not Demonstrated (ND). Please provide as many written comments as you can to acknowledge each team's hard work and to help teams improve. When you have completed the evaluation, please provide the awards for which you would like this team to be considered.

**Beginning**    **Developing**    **Accomplished**    **Exemplary**

<b>Durability</b>		Evidence of structural integrity; ability to withstand rigors of competition			
N	D	quite fragile; breaks a lot	frequent or significant faults/repairs	rare faults/repairs	sound construction; no repairs
<b>Mechanical Efficiency</b>		Economic use of parts and time; easy to repair and modify			
N	D	excessive parts or time to repair/modify	inefficient parts or time to repair/modify	appropriate use of parts and time to repair/modify	streamlined use of parts and time to repair/modify
<b>Mechanization</b>		Ability of robot mechanisms to move or act with appropriate speed, strength and accuracy for intended tasks (propulsion and execution)			
N	D	imbalance of speed, strength and accuracy on most tasks	imbalance of speed, strength and accuracy on some tasks	appropriate balance of speed, strength and accuracy on most tasks	appropriate balance of speed, strength and accuracy on every task
Comments:					
<b>Programming Quality</b>		Programs are appropriate for the intended purpose and would achieve consistent results, assuming no mechanical faults			
N	D	would not achieve purpose	would not achieve purpose	should achieve purpose repeatedly	should achieve purpose every time
<b>Programming Efficiency</b>		Programs are modular, streamlined, and understandable			
N	D	excessive code and difficult to understand	inefficient code and challenge to understand	appropriate code and easy to understand	streamlined code and easy for anyone to understand
<b>Automation/Navigation</b>		Ability of the robot to move or act as intended using mechanical and/or sensor feedback			

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As a judge, you'll evaluate team performance in each rubric criteria. From beginning to exemplary, each rubric area specifies the team behavior you should see at that level. You can mark "ND" for "Not Demonstrated" if the team doesn't provide any information to help you assess what they did.

In FLL, we'd like every team to strive for the "Accomplished" level. One approach to evaluating a team is to start by assuming they are accomplished, then adjust their evaluation based on the team's performance.



## Make Comments Meaningful



- Be specific when taking notes and discussing teams
- Specific comments more helpful than impressions



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When taking notes, discussing teams, and completing rubrics, be specific and share examples or evidence that supports why the team achieved a particular evaluation. Specific comments are more helpful to teams than general impressions.

## Feedback

- Constructive comments
- Teams work hard
- Treat them with respect
- Compliment with appropriate phrases
- Compliment accomplishments or cerebral prowess
- Communicate opportunities to improve positively

"We cannot always build the future for our youth, but we can build our youth for the future"  
Franklin D. Roosevelt



When writing feedback for teams, recognize that teams work hard and treat them with respect.

Compliment the children's achievements with vocabulary appropriate for the subject matter. Make sure you positively communicate opportunities to improve. Keep all your comments constructive.

When you first meet in your judging pair, determine a system to keep detailed notes, complete rubrics, and make comments in between teams so that you'll stay on time while giving quality feedback.

## Comment Examples



- *The use of a single design to connect your attachments helped ensure the durability of your robot.*
- *Your KISS approach helped keep your programs simple and clean and led to repeatable robot behavior.*
- *Using documentation and single-purpose myBlocks helped team members understand programs others had written.*
- *Strategic use of the touch sensor allowed robot to get back to base most of the time.*
- *You described a disciplined approach to testing design ideas and improving the robot's performance.*
- *Use of larger wheels raised the robot chassis above the debris, but a change in design might improve the robot's center of gravity.*

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Here are a few good examples of comments that cite evidence for a team at the “Accomplished” level:

- *The use of a single design to connect your attachments helped ensure the durability of your robot.*
- *Using documentation and single-purpose myBlocks helped team members understand programs others had written.*
- *Use of larger wheels raised the robot chassis above the debris, but a change in design might improve the robot's center of gravity.*

Since time is short, don’t worry too much about writing full sentences, but focus on positively conveying why you placed the team at that level.



# Robot Design Rubric



Circle team strength areas

- Recognition
- Acknowledgement



FLL Robot Design		Team Number
FIRST LEGO League		Judging Room
<p>Directions: For each skill area, clearly mark the box that best describes the team's achievement(s). If the team does not demonstrate skill in a particular area, then put an "X" in the first box for that Demonstrated Skill. Please provide as many written comments as you can to acknowledge each team's hard work and to help teams improve. When you have completed the evaluation, please circle the awards for which you would like this team to be considered.</p>		
	Rating	Example
Mechanical Design	<p><b>Buildability</b> Evidence of design to improve, ability to withstand signs of competition.</p> <p>1. Does it require a lot of repair or adjustment?</p> <p>2. Does it require a lot of repair or adjustment?</p> <p>3. Does it require a lot of repair or adjustment?</p> <p>4. Does it require a lot of repair or adjustment?</p>	<p>1. Does it require a lot of repair or adjustment?</p> <p>2. Does it require a lot of repair or adjustment?</p> <p>3. Does it require a lot of repair or adjustment?</p> <p>4. Does it require a lot of repair or adjustment?</p>
	<p><b>Mechanical Efficiency</b> Efficient use of parts and time; ability to repair and modify.</p> <p>1. Does it require a lot of repair or adjustment?</p> <p>2. Does it require a lot of repair or adjustment?</p> <p>3. Does it require a lot of repair or adjustment?</p> <p>4. Does it require a lot of repair or adjustment?</p>	<p>1. Does it require a lot of repair or adjustment?</p> <p>2. Does it require a lot of repair or adjustment?</p> <p>3. Does it require a lot of repair or adjustment?</p> <p>4. Does it require a lot of repair or adjustment?</p>
	<p><b>Mechanical Innovation</b> Ability to develop and use parts and materials in new and creative ways.</p> <p>1. Does it require a lot of repair or adjustment?</p> <p>2. Does it require a lot of repair or adjustment?</p> <p>3. Does it require a lot of repair or adjustment?</p> <p>4. Does it require a lot of repair or adjustment?</p>	<p>1. Does it require a lot of repair or adjustment?</p> <p>2. Does it require a lot of repair or adjustment?</p> <p>3. Does it require a lot of repair or adjustment?</p> <p>4. Does it require a lot of repair or adjustment?</p>
	<p><b>Mechanical Creativity</b> Ability to use parts and materials in new and creative ways.</p> <p>1. Does it require a lot of repair or adjustment?</p> <p>2. Does it require a lot of repair or adjustment?</p> <p>3. Does it require a lot of repair or adjustment?</p> <p>4. Does it require a lot of repair or adjustment?</p>	<p>1. Does it require a lot of repair or adjustment?</p> <p>2. Does it require a lot of repair or adjustment?</p> <p>3. Does it require a lot of repair or adjustment?</p> <p>4. Does it require a lot of repair or adjustment?</p>
Programming	<p><b>Programming Quality</b> Program is easy to understand and well documented.</p> <p>1. Does it require a lot of repair or adjustment?</p> <p>2. Does it require a lot of repair or adjustment?</p> <p>3. Does it require a lot of repair or adjustment?</p> <p>4. Does it require a lot of repair or adjustment?</p>	<p>1. Does it require a lot of repair or adjustment?</p> <p>2. Does it require a lot of repair or adjustment?</p> <p>3. Does it require a lot of repair or adjustment?</p> <p>4. Does it require a lot of repair or adjustment?</p>
	<p><b>Programming Efficiency</b> Program is readable, understandable, and well documented.</p> <p>1. Does it require a lot of repair or adjustment?</p> <p>2. Does it require a lot of repair or adjustment?</p> <p>3. Does it require a lot of repair or adjustment?</p> <p>4. Does it require a lot of repair or adjustment?</p>	<p>1. Does it require a lot of repair or adjustment?</p> <p>2. Does it require a lot of repair or adjustment?</p> <p>3. Does it require a lot of repair or adjustment?</p> <p>4. Does it require a lot of repair or adjustment?</p>
	<p><b>Programming Innovation</b> Ability to use parts and materials in new and creative ways.</p> <p>1. Does it require a lot of repair or adjustment?</p> <p>2. Does it require a lot of repair or adjustment?</p> <p>3. Does it require a lot of repair or adjustment?</p> <p>4. Does it require a lot of repair or adjustment?</p>	<p>1. Does it require a lot of repair or adjustment?</p> <p>2. Does it require a lot of repair or adjustment?</p> <p>3. Does it require a lot of repair or adjustment?</p> <p>4. Does it require a lot of repair or adjustment?</p>
Strategy & Innovation	<p><b>Design Process</b> Ability to identify and address important design issues in a timely and efficient manner.</p> <p>1. Does it require a lot of repair or adjustment?</p> <p>2. Does it require a lot of repair or adjustment?</p> <p>3. Does it require a lot of repair or adjustment?</p> <p>4. Does it require a lot of repair or adjustment?</p>	<p>1. Does it require a lot of repair or adjustment?</p> <p>2. Does it require a lot of repair or adjustment?</p> <p>3. Does it require a lot of repair or adjustment?</p> <p>4. Does it require a lot of repair or adjustment?</p>
	<p><b>Team Strategy</b> Ability to clearly define and describe the team's game strategy.</p> <p>1. Does it require a lot of repair or adjustment?</p> <p>2. Does it require a lot of repair or adjustment?</p> <p>3. Does it require a lot of repair or adjustment?</p> <p>4. Does it require a lot of repair or adjustment?</p>	<p>1. Does it require a lot of repair or adjustment?</p> <p>2. Does it require a lot of repair or adjustment?</p> <p>3. Does it require a lot of repair or adjustment?</p> <p>4. Does it require a lot of repair or adjustment?</p>
<p><b>Strengths</b> <u>Mechanical Design</u> <u>Programming</u> <u>Strategy &amp; Innovation</u></p>		

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At the bottom of the rubric, circle one or more areas of strength for the team. This acknowledges the team's efforts and let's them know that the judges recognized their strengths.

During initial deliberations, these strength areas may help you select teams for award nominations.

## Award Eligibility



- Allowable Equipment and Software rules must be followed on the table to win robot performance or any robot design awards
  - May use additional parts (such as a 2<sup>nd</sup> robot or prototype attachment) to demonstrate design process when clearly identified
- Robot design assessment may not always align with robot performance scores.
  - When this happens, it is good to take a second look
- May use Robot Game Scores when deciding between two otherwise equal teams.
- Teams must demonstrate FLL Core Values

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In addition to the general award eligibility requirements, teams must follow the Allowable Equipment and Software rules in order to win any Robot Performance or Robot Design awards. Teams are allowed to bring additional parts to judging sessions, such as a second robot or a prototype attachment used during the design process, as long as they clearly identify the extra parts and that the extras are not being used on the table.

Most of the time, teams with high Robot Performance scores will also do well in Robot Design judging. When the high performance is not aligned, however, take a second look. Sometimes teams with a great robot design just have a bad day on the game tables or high scoring teams don't have excellent designs. Robot Design judging is done separately from the Robot Game scores to recognize both great design and great performance. Robot Game scores should only influence Robot Design judging when you're having a hard time deciding between two teams who are otherwise equal.

Core Values is just as important within Robot Design as the other judged areas. If you find that a team doesn't understand or can't explain how they came up with their robot design or programming, you might have a concern about adult intervention. Report any concerns to the Judge Advisor so they may be further investigated.

# Allowable Equipment



Quantity	Electrical Item	What It Looks Like
1	Controller	
Unlimited  (Any sensor NOT shown here is Not Allowed)	Sensors  (Touch, Light, Color, Rotation, Ultrasonic or Gyro)	

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In order to be fair and equitable, the robots used for *FIRST* LEGO League have a list of allowable parts and software.

The allowable equipment and software are listed in the Robot game rules.

Allowable RCX, NXT, and EV3 parts include the controllers and the Sensors pictured here.

# Allowable Equipment



Quantity	Electrical Item	What It Looks Like
4	Motors	

- Unaltered LEGO elements only  
(No other construction materials)

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Equipment allowed also includes the RCX, NXT, and EV3 motors pictured here. FLL teams are now allowed to include four motors on their robots.

Teams are also allowed to use the lamps, cables, batteries or battery packs in the quantities listed in the Challenge document.

Read the Robot Game rules carefully, so that you're familiar with the types and quantities of parts from all three generations of LEGO MINDSTORMS robotics kits. Note that parts not shown in the pictures are not allowed, including items that may be sold by LEGO but are not manufactured by LEGO.

# Allowable Software



**Includes Patches, Add-ons and New Versions**

Here is the allowable software.  
LEGO MINDSTORMS  
ROBOLAB  
LEGO MINDSTORMS NXT-G  
LEGO MINDSTORMS EV3

## Software Not Allowed



Text-based software

Other “outside” software

- Custom NXT-G blocks
- LabVIEW
- RobotC

Equal coaching for all teams is not ensured

- Lessen this unfairness by capping the power of the tools

“From here, it becomes an engineering problem; the engineer considers the ground motion that will occur and evaluates the requirements of the proposed structure in the light of the local foundation conditions.”  
Charles Francis Richter



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software that is NOT ALLOWED includes

Text based and “outside” software such as Custom NXT-G blocks, Labview and RobotC.

Software options are limited because team coaches have varying experiences with programming. Like the equipment rules, the software limits help give every team an equal foundation.

## Teams for Award Consideration



Teams who <i>win</i> awards stand out from other teams. They often...	<b>Avoid nominating a team for an award if the <u>only</u> reason they stand out is...</b>
<ul style="list-style-type: none"><li>• Have autonomous robots that accommodate variances in field set up kits and tables</li><li>• Collect their own data to support or test design choices</li><li>• Explain and follow a clear design process, including documented programs, design features, and decision making</li><li>• Explain the engineering and physics behind their robot design</li></ul>	<ul style="list-style-type: none"><li>• A high Robot Performance score</li><li>• A big or complicated robot (Remember KISS)</li></ul> <p><i>Sometimes, a great award candidate is a team who fails to run a successful mission during the judging session.</i></p>

**What does a team at the “Accomplished” level look like?**

Look at your Judge Prep Pack for a detailed example.

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So, how will you know which teams to consider for awards?

The teams who win awards will stand out from other teams. You’ll see that they often:

- Have autonomous robots that accommodate variances in field set up kits and tables
- Collect their own data to support or test design choices. For example, using mission repeatability data to choose between two chassis designs.
- Explain and follow a clear design process, including documented programs, design features, and decision making
- Explain the engineering and physics behind their robot design

Sometimes it’s easy to nominate the team for an award because they were memorable for their big, complicated robot or their high Robot Performance score. While teams who win awards might have those qualities too, look beyond their initial appeal to determine whether the other items on the rubric support them rising to the top for Robot Design.

Keep in mind that sometimes a great candidate for an award will be a team who fails to run a successful mission during the judging session. A great robot design might not perform in judging due to limitations in the way the Robot Design judging room was set up.

Now, what does a team at the “accomplished” level look like? Refer to your Judge Prep Pack for a detailed example of an accomplished team.



# Tools for Robot Design Judges



- Robot Design Judging Prep Pack
- Robot Design Judging Primer
- Challenge Document
  - Missions and Rules
  - Allowable Equipment
- Robot Game Updates

## Robot Design Judging Primer



Robot Design Judging in FLL can be compared to an engineering design review in the "real world". Design teams present their robots to panels based on selecting the robots that best meet the requirements (specification of missions given constraints like size, parts usage and software. The natural inclination for engineers and technical people is to say, "There is an easy fix to use which robots are best - the competition!" However, in FLL, and often in the "real world", decisions are made based on how well a team can explain their design and all the things they considered while developing it. The FLL Robot Design rubric represents a set of criteria that we feel are important "takeaways" from participating in the design of an FLL competition robot. They are analogous to evaluation criteria used when selecting between competing designs. Judges gather information about teams' mechanical design, programming and overall design process to evaluate a team and its robot.

As a judge, here are some overall things to consider:

- The Robot Design judging session is more about the team's ability to present the robot and all the thoughts and considerations that went into their final product than it is about to performance. The performance is covered under the Robot Performance Award. The judging session is the time for the judges to learn from the teams the design processes they used to make decisions and gain understanding. It also allows discussion so that judges can be sure that the teams did the work.
- You may ask teams to perform missions with their robot on the judging table. Give teams the benefit of the doubt should these requests not work successfully all the time. Judging tables and field setups are not usually built or maintained to the same standards as competition ones. There is also a tendency for Murphy's Law to rule in these sessions and for teams to be nervous and mistake prone when running missions in a judging setting.
- Teams may bring additional prototypes of their robot or attachments into a judging session. Sometimes these prototypes utilize additional electrical parts beyond those allowed in competition. Remember that electrical parts and software rules apply only to the robot used in the competition itself, and that extra parts or software used by teams to demonstrate designs are perfectly allowable.
- Simpler is usually better. Don't be overly impressed with complicated robots. The complication must be used for a purpose.
- Remember that this is an engineering challenge for autonomous robots. Small imperfections in the field, mission models and environmental variations must be considered by Accomplished and Exemplary teams.

### Mechanics of Design

**Robustness** - The robot should be able to withstand the rigors of the competition, for example it should be able to contact walls or mission models without pieces falling off or breaking. Attachments should be similarly robust. Long arms that delicately grip a piece aren't very effective if they can't grip attached to the robot.

**Mechanical Efficiency** - Here the judges are looking for robot structures and attachments which show a judicious use of parts. For example, using six pins to tie two beams together is not as efficient as using one at each end. One note here: don't ever penalize the teams for adding small bits of "flair" or pieces that are fun for them to use to express their creativity. Remember the Core Value "We have fun!"

**Mechanization** - Judges look here for how the robot moves and operates. They look to see whether the robot balances speed and power.

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You have many tools available to you as you prepare to be a Robot Design judge and make awards decisions at the tournament.

After completing this training, be sure to review the Robot Design Judging Prep Pack, which includes the Robot Design Judging Primer. The Prep Pack contains a more in depth discussion of each rubric criteria and provides additional tips for judges. You'll want to review the rubric carefully and have a copy available as you answer the Robot Design Certification questions.

The Robot Design Judging Prep Pack includes the Challenge document for each season. It's also available on the FIRST LEGO League website. Be sure to check the Robot Game Updates on the website before attending your tournament.

With all of these tools and guidance from the Head Judge and Judge Advisor, you'll be well prepared to select the best teams to receive Robot Design awards at your tournament.



## ACTIVITY

- Review the FLL Robot Design Rubric
- Find a video of a team at a FLL Robot Design Judging session.
  - *What questions would you ask the team?*
  - *Complete the rubric for the team based on what you saw.*
- If possible, ask another person to do this with you, compare notes, and complete one rubric together.

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Now is a great time for a little practice. Begin by reviewing the Robot Design Rubric, available as part of the Robot Design Prep Pack or the FIRST LEGO League website.

Next, find a video of a team at a Robot Design Judging session at a past tournament. You might search YouTube or other video sharing sites or use a video provided by your FLL Partner or Judge Advisor. While you watch the video, think about what questions you would ask the team. Then, complete a practice rubric for the team based on what you saw.

If possible, ask another person to review the video with you. Then pretend you're part of a judging pair with that person, compare notes and complete one rubric together as you would at a tournament.



Thank you for completing Robot Design Judge Training! Be sure to answer the Certification questions in order to complete Robot Design Judge Certification. You'll need to receive at least 80% to pass, but you can try again if you need to do so.

You should now be prepared to serve as a Robot Design Judge at an official *FIRST* LEGO League event. We hope you have a great time and consider volunteering for another *FIRST* event in the future.

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