FIRST® LEGO® League Challenge is the oldest of three divisions of *FIRST* LEGO League, created to inspire youth to experiment and grow their critical thinking, coding, and design skills through fun hands-on STEM learning and robotics. Once a child progresses through the *FIRST* LEGO League divisions (Discover, Explore and Challenge), they are encouraged to "move up" to *FIRST*® Tech Challenge (grades 7-12/ages 12 - 18) and/or *FIRST*® Robotics Competition (grades 9-12/ages 14-18).

All *FIRST*® programs are built on a foundation of Core Values, celebrating discovery, impact, inclusion, innovation, teamwork and fun.

FIRST® LEGO® League Challenge makes STEM inspiring and fun

What have teams been doing?

For roughly 12 weeks, teams of students ages 9-16* have engaged in research, problem-solving, coding, and engineering – building and programming a LEGO® Education SPIKE™ Prime or LEGO MINDSTORMS® robot and conducting a research project to identify and solve a relevant real-world problem related to the annual theme.

*varies by country

WHAT'S HAPPENING TODAY?

We are celebrating the teams' hard work!

Judging: Teams will share what they have learned and get valuable feedback on their Robot Design, Core Values and Innovation Project in a half-hour judging session. Judges will assess their work on rubrics and provide some immediate verbal feedback to encourage and inspire them.

Robot Game: In addition to judging, each team will play three separate 2.5-minute matches of the Robot Game.

They will try to have their robot score as many points as possible by solving the missions of the RePLAY℠ game. Only their highest score counts.

The Robot Game allows teams to demonstrate how well their design and code worked. In between matches, you may see them working together to iterate and improve their robot for their next round.

The Robot Game will also showcase how the teams embody *Gracious Professionalism*® -- the spirit of friendly competition unique to all *FIRST* programs.

When all the matches and judging sessions are complete, the top-performing teams will take home awards, but all teams will share in the celebration of a season well done.

Learn more at: www.firstlegoleague.org

CORE VALUES

Your team will demonstrate *FIRST®* **Core Values** throughout your season and beyond!

Your team will:

- Apply **TEAMWORK** and **DISCOVERY** to explore the challenge.
- **INNOVATE** with new ideas about your robot and project.
- Show how your team and your solutions will have an **IMPACT** and be **INCLUSIVE**!
- Celebrate by having **FUN** in everything you do!

ROBOT DESIGN

Your team will prepare a **short presentation** on your robot design, programs, and strategy.

Your team will:

- Design and build your robot.
- Program it to solve Robot Game missions.
- Explain how your robot will act based on the code you wrote.
- Describe your strategies for the Robot Game.

ROBOT GAME

Your team will practice the **2.5-minute matches** to complete as many missions as possible.

Your team will:

- Strategize which Robot Game missions to solve.
- Design any attachments your robot will need to complete the missions.
- Test and refine your programs and robot design.
- Compete at an event!

INNOVATION PROJECT

Your team will prepare a **5-minute presentation** to explain your Innovation Project.

Your team will:

- Identify a problem to solve.
- Design a solution to the problem for your community.
- Share your ideas, learn from others, and improve your solution.
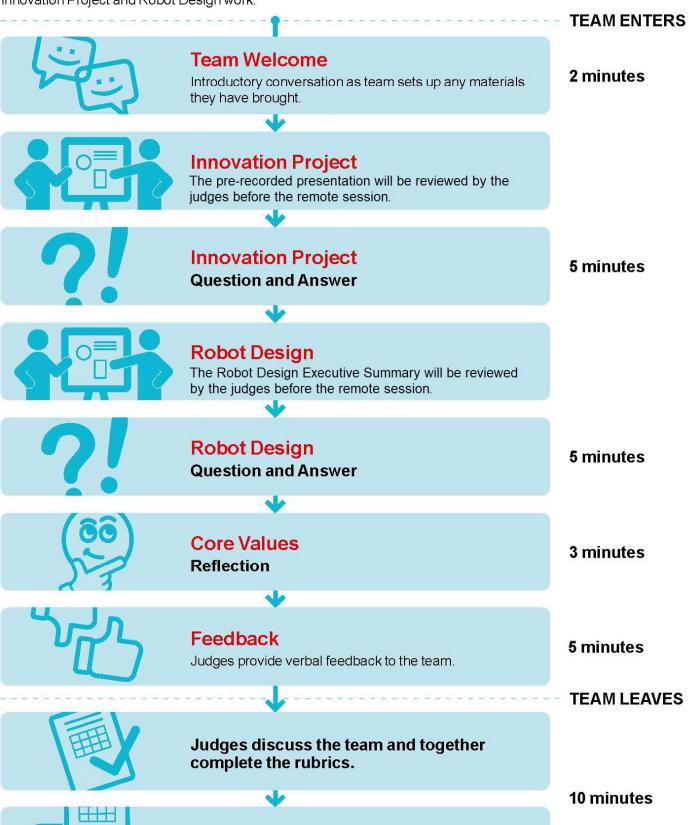- Pitch your solution at an event.

Challenge Story

Remote Judging Session Flowchart for Judges

Teams should be demonstrating Core Values in everything they do. The judges are excited to see how they show TEAMWORK, DISCOVERY, INCLUSION, INNOVATION, IMPACT and FUN as they present their Innovation Project and Robot Design work.

This is the team's time to shine, so try to settle their nerves and encourage them. Please make sure they don't leave anything in the judging room, including any documentation, when they leave.

FIRST LEGO LEAGUE CHALLENGE

- **TEAM ENTERS**

Team Welcome
Introductory conversation as team sets up any materials they have brought.

2 minutes

Innovation Project
The pre-recorded presentation will be reviewed by the judges before the remote session.

Innovation Project
Question and Answer

5 minutes

Robot Design
The Robot Design Executive Summary will be reviewed by the judges before the remote session.

Robot Design
Question and Answer

5 minutes

Core Values
Reflection

3 minutes

Feedback
Judges provide verbal feedback to the team.

5 minutes

- **TEAM LEAVES**

Judges discuss the team and together complete the rubrics.

10 minutes

The rubrics can be handed in once they are complete.

Judging Session Script

Thank you for judging today. **Remember the most important thing is to enable the students to give their best performance and feel that their work is appreciated**. The teams should demonstrate the *FIRST®* Core Values in everything they do, so by the end of the judging session you will be a good position to evaluate them on the Core Values sheet.

The sample script below will guide you through the judging session. Decide which judge should be responsible for timekeeping and moving the team through each section. You will all work together to complete the rubrics, but decide in advance who will be responsible for filling in each sheet.

Your Session flowchart gives an overview of the different sections of the judging session and timing. The rubrics and session flowchart should have been shared with teams before the tournament, so they should know what to expect. However, they may be nervous or stressed, so please remember to put the team at ease from the very start of the session.

Text in *italics* is intended to be read, but adjust to what feels natural. Please use the questions and prompts in the colored boxes below as time allows. The color coding corresponds to your rubrics and is as follows:

Red – Core Values;	Blue – Innovation Project;	Green – Robot Design

Team Welcome

As the team enters and sets up you should introduce yourselves and tell the team where you work and what you do.

Welcome everyone, are you the ___(Team Name)___? Come in and set up your things.

My name is ___(Lead Judge Name)___. I'm a ___(profession)___ and I work for ___(Company/organization)___.

This is ___(Judge 2 Name)___ and they're a ___(profession)___ for ___(Company/organization)___.

And this is ___(Judge 3 Name)___ and they're a ___(profession)___ for ___(Company/organization)___.

We're really excited about seeing your work today!

Rubric/Award Area	Elicit information to complete your rubric with the following questions or prompts
Breakthrough and Rising All-Star Awards – helps to establish team's starting point	While you're setting up - can we just ask you to raise your hand if this is the first year you have competed in *FIRST®* LEGO® League Challenge? Great, now raise your hand if it is your second year, third year etc.
All Core Values	Tell us about your team meetings. How did you organize the work and who did what?
	How do you all know each other and how did the team get together?

Thanks so much for telling us a bit about your team, now we're ready to listen to your Innovation Project presentation.

Innovation Project Presentation

Team performs their presentation – DO NOT interrupt presentations unless they go over 5 minutes

Innovation Project Question and Answer

Rubric/Award Area	Elicit information to complete your rubric with the following questions or prompts
IDENTIFY **Discovery Core Value**	Describe the problem that you were trying to solve in one sentence. What was the most helpful resource you used in your research and what did you learn from it?
DESIGN **Innovation Core Value** **Inclusion Core Value**	Did you have a lot of ideas and what is most innovative thing about the idea you chose? How did you ensure that everyone had an important task to do and that their work was valued by the team?
CREATE	Describe the steps your team took to develop your project solution. What have you been using to help explain and share your solution with others?
ITERATE	Who did you choose to share your solution with and what did they say? Did you make any changes or improvements after sharing your solution and if so, what did you change?
COMMUNICATION **Impact Core Value and** **Community Impact Award**	How did you decide on the style of your presentation and what creative part are you most proud of? How will your solution help others and has your solution already made an impact on your community?

Great! Now we would love to hear about your Robot Design! Tell us about your robot!

Robot Design Explanation

Allow team to explain their robot and code. Some teams may need more encouragement if they are nervous so you can begin the questioning to help them with their explanation.

Robot Design Question and Answer

Rubric/Award Area	Elicit information to complete your rubric with the following questions or prompts
IDENTIFY Discovery Core Value	Which missions did you choose and why? How did you make sure everyone on your team developed their building and coding skills?
DESIGN Innovation Core Value	How did you organize building the robot and writing the code, and why did you do it that way? Explain the most innovative part of your robot and your code.
CREATE	Tell us about how your robot uses attachments or sensors to complete missions. Explain your different codes and how they make your robot act.
ITERATE	How did you check that your robot was consistent at scoring points on a mission? Describe one way your robot got better through the season.
COMMUNICATE Inclusion Core Value	Explain the steps your team took to design, build and code your robot. How did you ensure every team member was involved and understood the robot and coding?

Core Values Reflection

Thank you for telling us about your project and robot, now we're going to ask you a few more questions about your team.

Rubric/Award Area	Elicit information to complete your rubric with the following questions or prompts
All Core Values	Describe the toughest challenge your team faced and how you overcame it. Of all the things your team accomplished, what are you most proud of? How did your coach help you this season? How did you resolve any conflicts or disagreements that your team had?

Thank you so much for telling us about your team and all the great work you accomplished during the season!

Feedback

We have some comments, but first do you have any specific things you want feedback on?

You may not have comments on every area, but these prompts will help you.

Okay, let's start with your Innovation Project [insert Innovation Project feedback here]

Moving on to your Robot Design [insert Robot Design feedback here]

Finally, some comments about your Team and Core Values [insert Core Values feedback here]

Use phrases like:

"We really liked…"

"Your _____ is really impressive!"

"Consider (or have you considered?) using ABC… to XYZ…"

"We loved the way you talked to the expert about ABC and then used their feedback to improve your ideas."

Be sure to call out their strengths, (areas where they Exceeded), and identify areas for improvement (areas where they were Beginning or Developing). Try as best as possible to balance positive with constructive feedback. Be specific rather than generalizing and make sure they team understand your point. Always start and end on a positive note.

Wrap Up And Goodbye

Well done, that's everything! You did a great job, thank you for sharing all your hard work with us! It's clear you learned a lot! Good luck and have a great time with the other teams!

Completing The Rubrics

All three judges should come to agreement on the rubrics and add written feedback as time allows.

FIRST® LEGO® League Challenge Awards

Required Awards

Champion's Award

1 winner and up to 3 finalists depending on tournament size

This award celebrates a team that embodies the *FIRST®* LEGO® League Challenge experience, by fully embracing our Core Values while achieving excellence and innovation in Robot Performance, Robot Design and the Innovation Project.

Core Values Award

1 winner and up to 3 finalists depending on tournament size

This team displays extraordinary enthusiasm and spirit, knows they can accomplish more together than they could as individuals, and shows each other and other teams respect at all times.

Innovation Project Award

1 winner and up to 3 finalists depending on tournament size

This team utilizes diverse resources for their Innovation Project to help them gain a comprehensive understanding of their problem, have a creative, well-researched solution and effectively communicate their findings to judges and the community.

Robot Design Award

1 winner and up to 3 finalists depending on tournament size

This team uses outstanding programming principles and solid engineering practices to develop a robot that is mechanically sound, durable, efficient and highly capable of performing challenge missions.

Robot Performance Award

1 winner and up to 3 finalists (2nd, 3rd + 4th places) depending on tournament size

This award celebrates a team that scores the most points during the Robot Game. Teams have a chance to compete in at least three 2.5-minute matches and their highest score counts.

Coach/Mentor Award

Up to 3 winners and up to 3 finalists depending on tournament size

Coaches and mentors inspire their teams to do their best, both as individuals and together, and without them, there would be no *FIRST* LEGO League. This award goes to the coach or mentor whose leadership and guidance is clearly evident and best exemplifies the *FIRST* Core Values.

Optional Awards

Breakthrough Award

Up to 3 winners

This award celebrates a team that made significant progress in their confidence and capability in both the Robot Game and Innovation Project and are a shining example of excellent Core Values. They demonstrate that they understand that what they discover is more important than what they win.

Engineering Excellence Award

Up to 3 winners

This award celebrates a team with an efficiently designed robot, an innovative project solution that effectively addresses the season challenge and great Core Values evident in all they do.

Rising All-Star Award

Up to 3 winners

This award celebrates a team that the judges notice and expect great things from in the future.

Motivate Award

Up to 3 winners

This award celebrates a team that embraces the culture of *FIRST* LEGO League through team building, team spirit and displayed enthusiasm.

Robot Design

FIRST LEGO LEAGUE CHALLENGE

Team #	Team Name		Judging Room

Instructions

Teams should communicate to the judges their achievement in each of the criteria below.
This rubric should be filled out during the Robot Design explanation.

Judges are required to tick one box on each separate line to indicate the level the team has achieved. If the team exceeds, please make a short comment in the Exceeds box.

BEGINNING 1	DEVELOPING 2	ACCOMPLISHED 3	EXCEEDS 4
			How has the team exceeded?
IDENTIFY - Team had a clearly defined mission strategy and explored building and coding skills they needed.			
☐ No clear mission strategy	☐ Partially clear mission strategy	☐ Fully clear mission strategy	☐
☐ Some team members learned building and coding skills	☐ Many team members learned building and coding skills	☐ All team members learned building and coding skills	☐
DESIGN - Team produced innovative designs and a clear workplan, seeking guidance as needed.			
☐ Minimal evidence of an effective workplan	☐ Some evidence of an effective workplan	☐ A lot of evidence of an effective workplan	☐
☐ Minimal explanation of robot and code's innovative features	☐ Some explanation of robot and code's innovative features	☐ A lot of explanation of robot and code's innovative features	☐
CREATE - Team developed an effective robot and code solution matching their mission strategy.			
☐ Limited functionality of robot attachments or sensors	☐ Developing functionality of robot attachments or sensors	☐ Good functionality of robot attachments or sensors	☐
☐ Unclear explanation of how code makes their robot act	☐ Partially clear explanation of how code makes the robot act	☐ Fully clear explanation of how code makes their robot act	☐
ITERATE - Team repeatedly tested their robot and code to identify areas for improvement and incorporated the findings into their current solution.			
☐ Minimal evidence of testing their robot and code	☐ Some evidence of testing their robot and code	☐ A lot of evidence of testing their robot and code	☐
☐ Minimal evidence their robot and code was improved	☐ Some evidence their robot and code was improved	☐ A lot of evidence their robot and code was improved	☐
COMMUNICATE - Team's explanation of the robot design process was effective and showed how all team members have been involved.			
☐ Unclear explanation of robot design process	☐ Partially clear explanation of robot design process	☐ Fully clear explanation of robot design process	☐
☐ Clear evidence that some team members involved	☐ Clear evidence that many team members involved	☐ Clear evidence that all team members involved	☐

Feedback Comments

Great Job:

Think about: