



FIRST® LEGO® League The Project

*Adapted from The FLL® Project Coaches Call Outline
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And FLL Project Presentation MD 2010 by Mercedes Young*

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FOR INSPIRATION AND RECOGNITION OF SCIENCE AND TECHNOLOGY



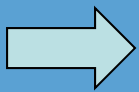
Why is there a Project?

- To learn more about the science behind the Challenge theme.
 - Teams explore actual problems that today's scientists and engineers are trying to solve (RESEARCH)
- To better understand the work of professionals in the field
- To identify a real-world problem.
- To develop an innovative solution
 - Teams use their creativity to develop a solution (or modify an existing solution) to solve a real-world problem (INNOVATIVE SOLUTION)



Coaches Role

- Facilitate...Guide...Encourage
... the process
- The team is responsible for the
content
- You should remind the team of
the timeline and where they
stand....



TIP: Don't spend too much time on any one step – keep the work moving forward.



THE PROJECT

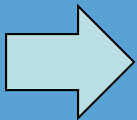
Through the Senior Solutions Project, your team will:

- Find a senior partner
- Identify and learn about a problem faced by seniors
- Create an innovative solution to the problem you identify
- Share your problem and solution with others



Resources

- **FLL Challenge Document: Project: p. 2-5**
 - ✓ <http://firstlegoleague.org/challenge/projectfaq>
- **Official Supplemental Material on the FLL website**
 - **Ask a Professional pdf.**
 - ✓ <http://firstlegoleague.org/sites/default/files/Challenge/SeniorSolutions/Ask%20a%20Professional%202012.pdf>
 - **Resources pdf.**
 - ✓ <http://firstlegoleague.org/sites/default/files/Challenge/SeniorSolutions/Resources%202012.pdf>
 - **Glossary pdf.**
 - ✓ <http://firstlegoleague.org/sites/default/files/Challenge/SeniorSolutions/Glossary%202012.pdf>
 - **Project Rubrics pdf.**
 - ✓ <http://www.firstlegoleague.org/sites/default/files/Challenge/Combined%20Rubrics.pdf>
 - **Project FAQ**
 - ✓ <http://firstlegoleague.org/challenge/projectfaq>



TIP – Print all docs and organize in a binder for the team



Other Resources

- **Coaches Handbook – Chapter 5**
- **FIRST LEGO League Challenge - Project Training DVD**
- **FLL Blog: fllblog.wordpress.com**
- **FLL Forums: forums.usfirst.org/forum**
- **FLL YouTube channel: www.youtube.com/fllglobal**
- **Email fllprojects@usfirst.org**
- **Other teams!** Many teams post helpful tips, videos, and links on the web. Just remember that if it is not on an official FLL site, it was not produced by FLL headquarters and could contain inaccurate information.



The 3 Parts to the PROJECT

- Identify a Problem
- Create an Innovative Solution
- Share your problem and solution with Others

You MUST do all three parts!

Then present a summary of these 3 parts
at the tournament



THINK ABOUT IT

- **Research the Senior Solutions theme. What are problems faced by seniors? Who is working on these problems?**
- **Read the Challenge documents very carefully. They provide you with many answers to commonly asked questions.**
 - Well written for students
- **Refer to the online resources that are provided by FLL.**
- **Use other resources such as books, the internet, newspaper articles, magazine articles, documentaries, etc.**
- **Talk with experts in the field. Have the team brainstorm on the many types of experts that work in this field.**
- **Be sure the entire team has a good understanding of the theme and can talk about the topic chosen.**

Project Steps

First : Identify and Get to know an adult who is 60 or older (*Senior Partner*)



1. Identify a Problem

- Talk with your senior partner and with experts. Encourage your team to consider all the questions or problems that come up.
- Brainstorm on what problems interest the team.
 - No idea is too small; no idea is too 'crazy', not judgments – think outside the box.
 - Record All Ideas!
- These will be real world problems. Your team will be like a group of scientists conducting research.
- Learn how professionals are dealing with these problems.
- Before selecting one problem that the team would like to address, consider potential innovative solutions (see next step).



2. Create an Innovative Solution

A. What does innovative mean?

- A new idea
- An improvement on an existing idea
- A creative idea
- Use of an existing idea but in a new way
- Does not have to be complicated to be innovative
- Does not have to include robotic solution - can be technological, robotic, engineering, design...
- The solution must be supported by data
- The Judges will be looking for research quality, innovative solutions and creative presentations

Innovative Solution Research

- Team brainstorms again on possible solutions to the questions now that they've completed in-depth research (with NOTES)
- Encourage innovation – a new solution or twist on an old solution
- What data do they need to collect to support their innovative idea? How can they test their idea?
 - Let them figure out what they want to test and how...even if it's not the best way – as long as it is safe





Testing the Innovative Solution

- **Facilitate your team's ideas to conduct 'tests' or 'experiments' to the best extent possible**
- **Collect and record data system**
- **Don't make judgments, predictions or suggestions unless absolutely necessary for safety or otherwise – go with it – let them own their process and results totally**
- **You'll be surprised by young creativity!**

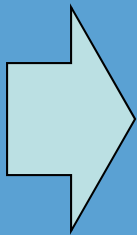
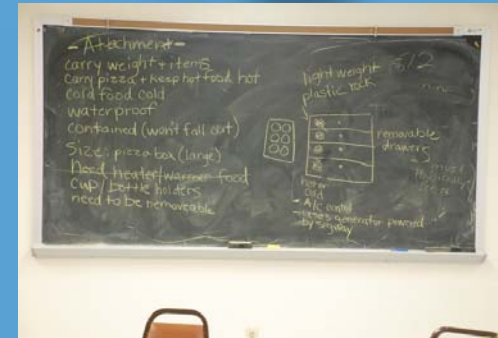


Analyze Data/Innovative Solution

- **Encourage reflection on their data collection during experiments**
- **Ask how this information may affect their data**
- **What might they try differently?**
- **Does their data support their ideas for a new solution? If not, how can/could they retest or reformulate their question?**

B. Does our team need to have the technology or working innovative solution to demonstrate to the judges?

- No, but the team needs to explain the solution clearly
- Diagrams or simplified models can be helpful for conveying key concepts of the innovation
- The judges will be looking for solutions that are feasible, so even if your team cannot demonstrate the solution, make sure they explain the technology involved



TIP: After considering possible solutions, make sure your team's solution is innovative by checking with experts, as well as reviewing patents and related sources. The judges will be looking for your team to show that this solution is not already in use. Once this process is complete, your team is ready to focus on their selected project.

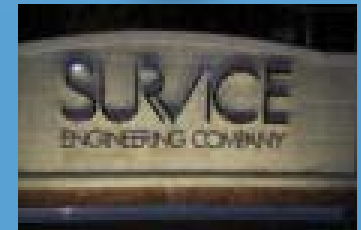


3. SHARE WITH OTHERS!

- Teams are encouraged to share their research and solutions with others – especially others who might benefit from the solution. *Video: LandsEnd MadBox lunch box. . . . [Lands End](#)*
 - Give a talk
 - Create a website or a poster
 - Perform a skit, rap
 - Make a comic book, etc.....
- Who is helped by your solution?
 - How can you let the know?
 - Can you present your research and solution to lawmakers, doctors, engineers, or groups who already help with your problem?
 - What is the best way to teach your audience

Who to share with?

- School or town
- Public organizations
- Church
- Public meetings
- Educational events
- Library
- Targeted audiences
- Youth organizations
- Professional organizations
- Scientists, engineers, experts, etc that you worked during the season
- The global FIRST community



PRESENTING AT A TOURNAMENT

- Summarize all of the above (all they learned) into 5 minutes for the judges
- Be **creative** with the format
 - Skit
 - Game Show
 - Song
 - TV Interview
 - Audiovisual – (presentation must still include a live portion)
- The **CONTENT** is important
- All team members **MUST** participate and be able to answer questions





PRESENTING AT A TOURNAMENT

- Look at the **Project Rubric** on the website to better understand how teams will be judged.
- Check out sample presentations on the Project Training DVD and YouTube. Ask the team members to share what they think makes a great presentation
- There will be a 5-10 min Q & A after the presentation
- **IMPORTANT** – the 5 minutes includes setup!
 - Practice the presentation including setup!
- **Simple props and costumes can be used**
- Your team **should** prepare a brochure or other material to leave with the judges.



Top 11 Tips!

- 1. Decide before or at the beginning of the season starts, how many hours a week the team will meet for the Project component of the Challenge. The time commitment requires both team meetings and independent research. It is important that the team members share goals and expectations for this time commitment.**
- 2. The Project is a fun and rewarding part of the FLL experience. Make sure every kid on your team has a chance to contribute to your team's innovative solution.**
- 3. It need not be overwhelming – simple is better.**



4. Practice in front of parents, other kids, or volunteer judges to make sure your team is ready for the spotlight.
5. Use the judging rubric for these volunteers to provide feedback, and remember that the team members may understand the parameters of the Project better than friends and family.
6. As noted in the Coaches' Handbook, do not allow the team members to mock or ridicule each other in their skit roles—Gracious Professionalism is essential in all aspects of the Project.

10. The judges are listening and scoring at the same time, and transitioning quickly from one presentation to the next—clarity is essential and a **handout or brochure** is helpful.
11. Teams often display a Project poster and supporting material in the pit at tournaments to share with other teams and spectators.





Project Avenue

[http://youtube video on the project process...](http://youtube.com/firstroboticsinmaryland)

[Sample Project Video](#)



FIRST Robotics
in Maryland



Questions?