

FIRST[®] LEGO[®] League

TUT  ***RIALS***

teach

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learn

**TAKING YOUR INNOVATION PROJECT TO
THE NEXT LEVEL**

TIPS FROM THREE GIA TEAMS

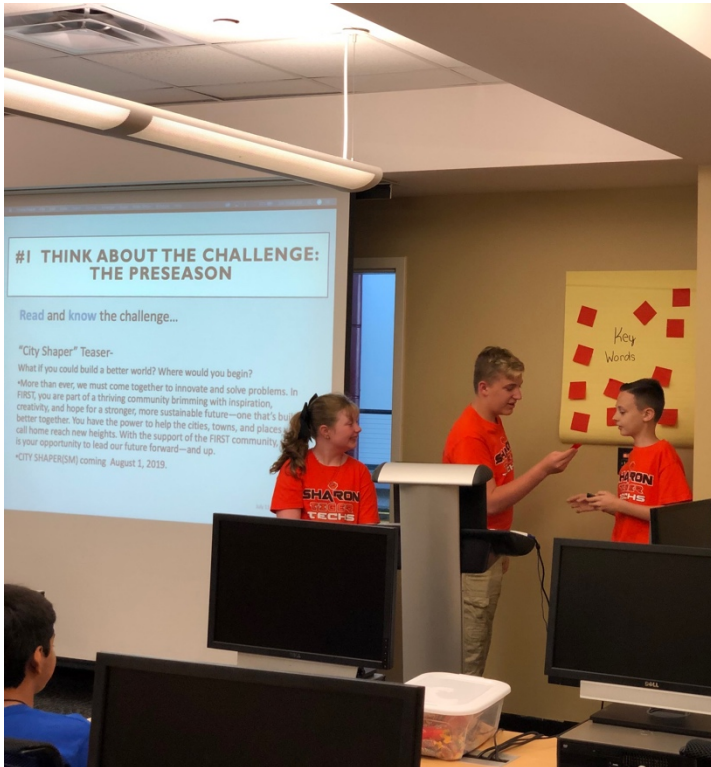
SHARON TIGER TECHS, NOT THE DROIDS YOU ARE LOOKING FOR, LEGO LEGION

ABOUT THE AUTHORS

- All three authors are Global Innovation Award Top 20 Teams
- Sharon Tiger Techs (2019), LEGO Legion (2018), Not the Droids You Are Looking For (2016)
- LEGO Legion was a Finalist and won \$5000. Read about it here:
<http://legolegionfll.weebly.com/global-innovation.html>



GET A HEAD START IN THE OFF SEASON



Key words can be taken from teaser text or teaser video that can lead to great preseason trips or talks with experts for the season.



Think about...who could you talk to? Where could you visit?



This will lead to great **resources** and **contacts** for the team after the season is launched.

In addition, think about presenting to these experts for project feedback later in the season.

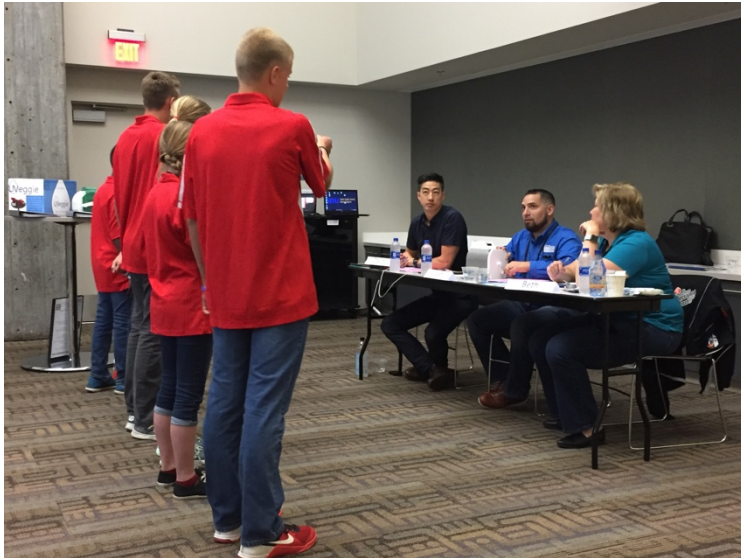
COMMUNICATE YOUR CONTENT IN YOUR 5 MINS

- It is very important to communicate all the key information in your 5 minute presentation so that judges can easily mark the rubric.
- 5 minutes includes set-up time, so keep the setup short and easy always so you have more time for your presentation

FIRST LEGO LEAGUE		Project		Team Number _____	
				Judging Room _____	
<small>Directions: For each skill area, clearly mark the box that best describes the team's accomplishments. Teams should demonstrate everything at the level; if they are missing part, mark the level below. If the team does not demonstrate an area, 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 team's areas of strength.</small>					
		Beginning	Developing	Accomplished	Exemplary
Research	Problem Identification	Clear definition of the problem being studied			
	N D	unclear; few details	partially clear; details missing	mostly clear; detailed	clear; very detailed
	Sources of Information	Quality and variety of data/evidence and sources cited			
	N D	minimal quality; variety limited	quality OR variety need improvement; did not include professional(s)	sufficient quality and variety; included professional(s)	extensive quality and variety; included multiple professionals
Innovative Solution	Problem Analysis	Depth to which the problem was studied and analyzed by the team, including extent of analysis of existing solutions			
	N D	minimal study; no analysis	minimal study; some analysis	sufficient study and analysis	extensive study and analysis
	Team Solution	Clear explanation of the proposed solution and description of how it solves the problem			
	N D	difficult to understand	some parts confusing	understandable	easy to understand by all
Presentation	Innovation	Degree to which the team's solution makes life better by improving existing options, developing a new application of existing ideas, or solving the problem in a completely new way.			
	N D	existing solution/application	solution/application contains some original element(s)	original solution/application; potential added value	original solution/application; demonstrated added value
	Solution Development	Systematic process used to select, develop, evaluate, test, and improve the solution (implementation could include cost, ease of manufacturing, etc.)			
	N D	process AND explanation need improvement	process OR explanation need improvement	systematic process included evaluation	systematic process included evaluation; implementation considered
Strengths	Sharing	Degree to which the team shared their Project before the tournament with others who might benefit from the team's efforts			
	N D	shared within the team and/or relatives	shared once outside the team	shared with one audience who may benefit OR one professional	shared with multiple audiences who may benefit OR multiple professionals
	Creativity	Imagination used to develop and deliver the presentation			
	N D	minimally engaging OR unimaginative	engaging OR imaginative	engaging AND imaginative	very engaging AND exceptionally imaginative
Comments	Presentation Effectiveness	Message delivery and organization of the presentation			
	N D	unclear OR disorganized	partially clear; minimal organization	mostly clear; mostly organized	clear AND well organized
	Strengths:		Research	Innovative Solution	Presentation
	<small>*Required for Award Consideration</small>				

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BUT ALWAYS HAVE MORE TO TELL IN Q&A



- A good project will have more information than what you presented in the 5 minutes.
- Keep a binder with your additional data.
- During Q&A, you will have a chance to share this additional information.
- At the end of Q&A, provide a handout for the judges with details that highlight your project.

MAKE EXPERTS COUNT – NOT JUST PARENTS

- Internet research itself only goes so far- use it to find experts! Don't be afraid to ask for a phone or video call. You'll be surprised how willing some experts are to help a group of students.
- Ask around in your own network of contacts. Sometimes a friend of a friend is just who you need.
- Think outside the box. Even if your invention is intended to be used by an astronaut, the best feedback may still come from doctors, scientists, college professors, or manufacturers.



SHARE WITH THOSE WHO CARE

- Some of LEGO Legion's best feedback came from kitchen utensil maker OXO. Even though the design had heavy technological aspects, the product design part was right up OXO's alley.
- The stronger your invention's connection with an expert's niche, the more helpful, and willing to help, they can be.
- Use their ideas as well as your own. They know the market or the technology, but you know your specific project better than anyone else.



MAKE IT INNOVATIVE

- Solution should be **innovative**. This means that it needs to meet one or more of the following:
 - Improve existing options;
 - Develop a new application of existing ideas;
 - Solve the problem in a completely new way.
- The original solution/application must demonstrate added value.
- For your solution, it does not have to be a full working prototype; however, a partial prototype or detailed drawings will help convey your project to the judges.
- During the presentation, convey that your product is innovative by comparing it and demonstrating that it is better than products that are already on the market.

COMPARISON SHEET

Here is a sample comparison sheet that the Droids used to convey how our solution is different.

You can download a copy here:
<http://flltutorials.com/Worksheets.html>

Innovation Worksheet				Name:	
Instructions:					
1. Find as many similar products/solutions as you can find and compare them to your team's solution					
2. The goal is to gather enough information to be able to explain how the team's solution is innovative (different or an improvement on something that exists). You can share all this information with your judges.					
Product/Link	Costs	Implementation Process	Pros	Cons	Other
Our Solution					

Created by FLLTutorials.com, 2019

DISCUSSION

- Watch the following videos of project presentations from teams who have attended International-level tournaments.
 - **LEGO Legion** – INTO ORBIT - <https://youtu.be/XI2fL5iaD6A>
 - **LEGO Legion World Festival** – Hydro Dynamics - <https://youtu.be/JUowcfW5oRg>
 - **Is LOST** – World Class - <https://www.youtube.com/watch?v=VJ3cs9W83Ug>
 - **Caught in a Brainstorm** - World Class - <https://youtu.be/9bskcvE9JkU>
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- What can we learn from each presentation?
 - What did they do well?
 - How many students were involved?
 - Were you able to fill in a rubric?
 - Were they creative?
 - What made this presentation different?

CREDITS

- This lesson was written by Tiger Techs, LEGO Legion and Not the Droids You Are Looking For.
- More lessons available at www.ev3lessons.com and www.flitutorials.com



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