

FIRST[®] LEGO[®] League ***TUT******RIALS***

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TAKING YOUR INNOVATION PROJECT TO
THE NEXT LEVEL

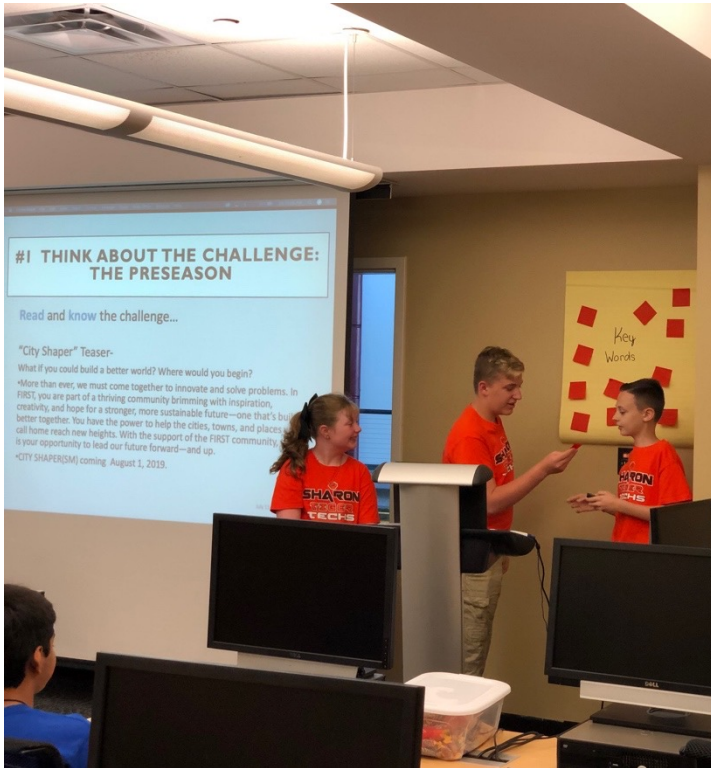
SHARON TIGER TECHS, NOT THE DROIDS YOU ARE LOOKING FOR, LEGO LEGION

ABOUT THE AUTHORS

- Sharon Tiger Techs (2019), LEGO Legion (2018), Not the Droids You Are Looking For (2016) - All three authors are Global Innovation Award Top 20 Teams
- Tips shared in this document helped the teams take their projects to the level of the Global Innovation Award (which existed until 2022)



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.

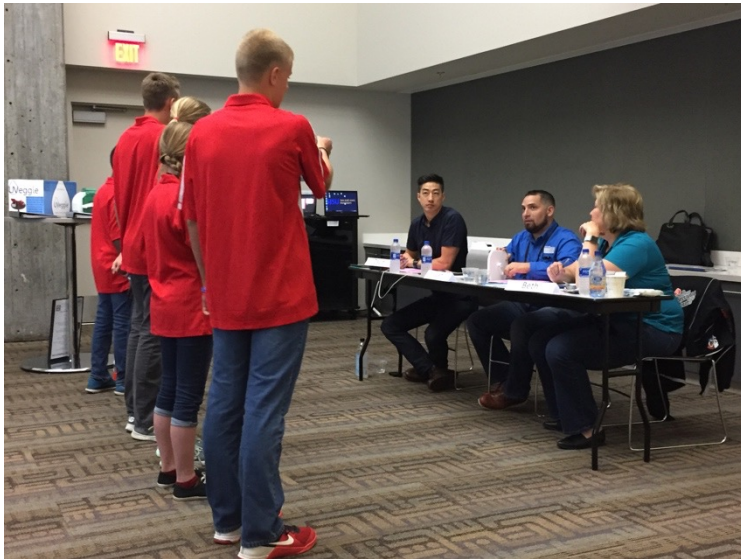
In addition, think about presenting to these experts for project feedback later in the season.

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

BEGINNING 1	DEVELOPING 2	ACCOMPLISHED 3	EXCEEDS 4
How has the team exceeded?			
IDENTIFY – Team had a clearly defined problem that was well researched.			
<input type="checkbox"/> Problem not clearly defined	<input type="checkbox"/> Partially clear definition of the problem	<input type="checkbox"/> Clear definition of the problem	<input type="checkbox"/>
<input type="checkbox"/> Minimal research	<input type="checkbox"/> Partial research from more than one source	<input type="checkbox"/> Clear, detailed research from a variety of sources	<input type="checkbox"/>
DESIGN – Team generated innovative ideas independently before selecting and planning which one to develop.			
<input type="checkbox"/> Minimal evidence of an inclusive selection process	<input type="checkbox"/> Partial evidence of an inclusive selection process	<input type="checkbox"/> Clear evidence of an inclusive selection process	<input type="checkbox"/>
<input type="checkbox"/> Minimal evidence of an effective plan	<input type="checkbox"/> Partial evidence of an effective plan	<input type="checkbox"/> Clear evidence of an effective plan	<input type="checkbox"/>
CREATE – Team developed an original idea or built on an existing one with a prototype model/drawing to represent their solution.			
<input type="checkbox"/> Minimal development of innovative solution	<input type="checkbox"/> Partial development of innovative solution	<input type="checkbox"/> Clear development of innovative solution	<input type="checkbox"/>
<input type="checkbox"/> Unclear model/drawing of solution	<input type="checkbox"/> Simple model/drawing that helps to share the solution	<input type="checkbox"/> Detailed model/drawing that helps to share the solution	<input type="checkbox"/>
ITERATE – Team shared their ideas, collected feedback, and included improvements in their solution.			
<input type="checkbox"/> Minimal sharing of their solution	<input type="checkbox"/> Shared their solution with user OR professional	<input type="checkbox"/> Shared their solution with user AND professional	<input type="checkbox"/>
<input type="checkbox"/> Minimal evidence of improvements in their solution	<input type="checkbox"/> Partial evidence of improvements in their solution	<input type="checkbox"/> Clear evidence of improvements in their solution	<input type="checkbox"/>
COMMUNICATE – Team shared a creative and effective presentation of their current solution and its impact on their users.			
<input type="checkbox"/> Presentation minimally engaging	<input type="checkbox"/> Presentation partially engaging	<input type="checkbox"/> Presentation engaging	<input type="checkbox"/>
<input type="checkbox"/> Solution and its potential impact on others unclear	<input type="checkbox"/> Solution and its potential impact on others partially clear	<input type="checkbox"/> Solution and its potential impact on others clear	<input type="checkbox"/>

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>
-
- 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.flltutorials.com



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