

# Part #2: Innovation Project Overview







### **Innovation Project Outline**

From the machines that move us to the electronics that connect us to the ways we power our cities and towns, energy is essential in our lives. Have you thought about where energy comes from? How it's generated? How it gets to you? How much you're using?

Explore your energy journey. How can you reimagine a better energy future?

Identify a specific problem related to improving your energy journey. (An energy journey is where energy comes from and how it is distributed, stored, and used).

Research your problem and your solution ideas.

Design and create a solution that could improve your energy journey.

Share your solution, collect feedback and iterate on your solution.

Create a creative and effective presentation that communicates your solution at an event.





### **Innovation Project Outline**

Mentors provide guidance, but let the kids pick their project.

The Innovation Project is about discovery – not Shark Tank!

You are not restricted to Project Sparks!

Super Powered is about Energy, not just Electricity!

**Energy Types?** 





## Picking a Project?

Time for a Demonstration...

(Need some volunteers from the audience)

Link





## Picking a Project?

#### **Team Discussion:**

**Question #1: What are your hobbies/interests?** 

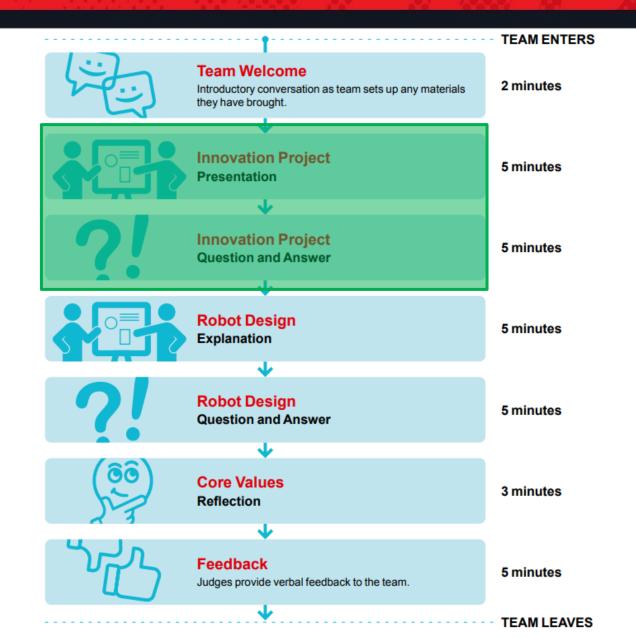
**Question #2: What are your Parent's interests/professions?** 

**Question #3: What is unique about your community?** 

**Question #4: What do you want to learn about?** 











### Judges assess teams in two areas:

Presentation: 5 min to describe the team's Innovation. Any format, any style!

Interview: 5 min to answer questions from the judges.

#### **Notes:**

**Everyone** must be involved in the Presentation in some way

Time to enter (including carrying equipment) counts against total team time

Coaches may accompany team, but cannot speak, help or participate in ANY way.



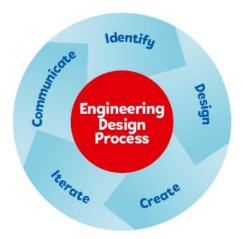


		Innovation P	roject		FIRST
		Team # Team Name		Judging Room	LEGO LEAGUE
		This rubric should be filled out during Judges are required to tick one bo	dges their achievement in each of the cr the Innovation Project presentation.		CHALLENGE
		BEGINNING 1	DEVELOPING 2	ACCOMPLISHED 3	EXCEEDS 4 How has the fearn exceeded?
		IDENTIFY - Team had a clearly of	defined problem that it was well research	ned.	
		Problem not clearly defined	Partially clear definition of the problem	Fully clear definition of the problem	
		Minimal research	Some research but quality unclear	Wide variety of quality research	
		DESIGN - Team generated innov	rative ideas independently before selecti	ing and planning which one to develop	
		Minimal idea generation across the team	Evidence of some ideas from across the team	Evidence of a lot of ideas from across the team	
		Minimal planning with some team members included	Some effective planning with some team members included	Highly effective planning including all team members	
Categories 4		CREATE - Team developed an o	riginal idea or built on an existing one w	ith a prototype model/drawing to repre-	sent their solution.
9 - 1 - 1		Minimal development of innovative solution	Partial development of innovative solution	A lot of development of innovative solution	
		No model/drawing of solution	Simple model/drawing which helps to share the solution	Detailed model/drawing which helps to share the solution	
		ITERATE - Team shared their ide	eas, collected feedback and included imp	provements in their solution.	
	N	Minimal sharing of their solution	Some sharing of their solution	A lot of sharing of their solution	
		Minimal evidence of improvements in their solution	Some evidence of improvements in their solution	A lot of evidence of improvements in their solution	
		COMMUNICATE - Team share	d a creative and effective presentation of	of their current solution and its impact of	on their users.
		Presentation minimally engaging	Presentation partially engaging	Presentation very engaging	
		Solution and its potential impact on others unclear	Solution and its potential impact on others partially clear	Solution and its potential impact on others fully clear	
			Feedback (	Comments	
		Gre	at Job:	Think :	about:
0					
Comments					

✓ Ratings







### Part 1: Identify

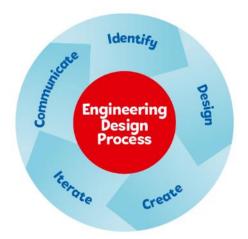
BEGINNING 1	DEVELOPING 2	ACCOMPLISHED 3	EXCEEDS 4	
			How has the team exceeded?	
IDENTIFY – Team had a clearly defined problem that was well researched.				
Problem not clearly defined	Partially clear definition of the problem	Clear definition of the problem		
Minimal research	Partial research from more than one source	Clear, detailed research from a variety of sources		

Define Problem: Aim for "Clear definition"

Research: Aim for "detailed research from a variety of sources"







### Part 2: Design

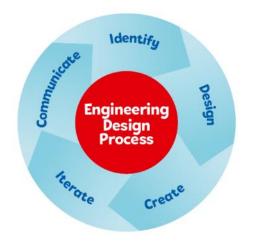
BEGINNING 1	DEVELOPING 2	ACCOMPLISHED 3	EXCEEDS 4
			How has the team exceeded?
<b>DESIGN</b> – Team generated innova	ative ideas independently before select	ing and planning which one to develop.	
Minimal evidence of an inclusive selection process	Partial evidence of an inclusive selection process	Clear evidence of an inclusive selection process	
Minimal evidence of an effective plan	Partial evidence of an effective plan	Clear evidence of an effective plan	

Idea Generation: Clear evidence of inclusive selection process

Planning: Clear evidence of effective plan







#### Part 3: Create

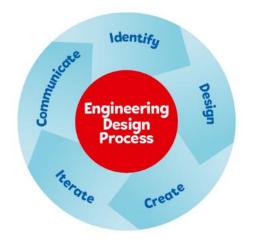
BEGINNING 1	DEVELOPING 2	ACCOMPLISHED 3	EXCEEDS 4
			How has the team exceeded?
CREATE – Team developed an original idea or built on an existing one with a prototype model/drawing to represent their solution.			
Minimal development of innovative solution	Partial development of innovative solution	Clear development of innovative solution	
Unclear model/drawing of solution	Simple model/drawing that helps to share the solution	Detailed model/drawing that helps to share the solution	

**Development:** How well is the idea developed? Note requirement for **innovation** and **target of a LOT of development** 

**Model/Drawing:** How is the idea represented? Level of detail important.







#### Part 4: Iterate

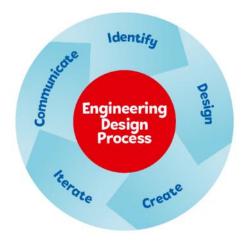
BEGINNING DEVELOPING 1 2		ACCOMPLISHED 3	EXCEEDS 4	
			How has the team exceeded?	
ITERATE – Team shared their ideas, collected feedback, and included improvements in their solution.				
Minimal sharing of their solution	Shared their solution with user OR professional	Shared their solution with user AND professional		
Minimal evidence of improvements in their solution	Partial evidence of improvements in their solution	Clear evidence of improvements in their solution		

**Sharing:** Aim for sharing solution with **USER** and **PROFESSIONAL**.

Improvements: Record how the solution changed. Provide a CLEAR evidence.







#### Part 5: Communicate

BEGINNING 1	DEVELOPING 2	ACCOMPLISHED 3	EXCEEDS 4
			How has the team exceeded?
COMMUNICATE – Team shared a creative and effective presentation of their current solution and its impact on their users.			
Presentation minimally engaging	Presentation partially engaging	Presentation engaging	
Solution and its potential impact on others unclear	Solution and its potential impact on others partially clear	Solution and its potential impact on others clear	

Presentation: Aim for an engaging presentation.

**Effective**: Does the presentation **CLEARLY** show the solution and its potential impact?

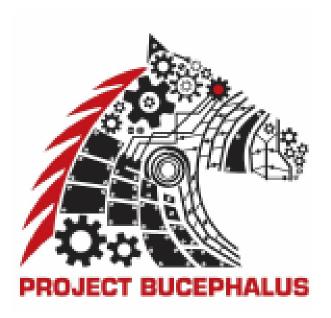












Research



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## **Innovation Project: Documentation**

Helping the Judges Remember you!







**Start Simple: 1-Page Handout** 

- Team Photo/Logo
- Problem Summary
- Solution Summary
- Solution Picture/Drawing
- List of Sources/Research
- List of Professionals/Sharing
- Alternate Ideas







## Work to Comprehensive...



#### Research

#### Project

North America Open Championship





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Publication: Development of a Supercritical Air Environment Control Unit
Publication: A Warm Heart and a Clear Head
Publication: Development of a Supercritical Air Environment
Publication: Apollo Operations Handbook Environmental Control System (ECS)
Publication: Boeing Active Thermal Control System (ATCS) Overview
Publication: Environmental Design and Human Behaviour
Publication: International Space Station Environmental control and Life Support and Thermal
Control systems Overview
Publication: Advanced Technology for Human Support in Space (1997) Chapter 2 Advanced Life support Systems
Publication: Advanced Technology for Human Support in Space (1997) Chapter 3 Environmental
Monitoring and Control
Publication: Living and Working in Space - Habitat
Website: (NASA) Cooling System Keeps Space Station Safe, Productive
Website: (Spacesholic) Apollo Command Module ECU
Website: (NASA) ISS Radiators
Website: (Psychology Today) Too much artificial light exposure can make you sick
Website: (Gbmodo) How NASA Deals With Odour Inside The ISS
Website: (Psychology Today) The Mysterious Power of Weather
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#### Remember:

- This method is overkill for most teams
- International Standard
- Schooling









