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INNOVATION PROJECT OVERVIEW

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ABOUT THE AUTHOR

- Seshan Brothers were on team Not the Droids You Are Looking For
- Our research project for Trash Trek was a Global Innovation Award semi-finalist project (Top 20 out of 30,0000 teams).
- Our research project in Nature's Fury won Innovative Solution at the FIRST LEGO League International Open in Toronto.
- Our research project for World Class was EV3Lessons.com which resulted in the site you are currently on! ;-)
- We are the Champion's award winners from World Festival 2018

WHAT IS THE INNOVATION PROJECT?

- A group research project related to the year's theme
- Research a real-world problem
- Come up with an innovative solution
- Iterate the idea and share your solution

Themes:

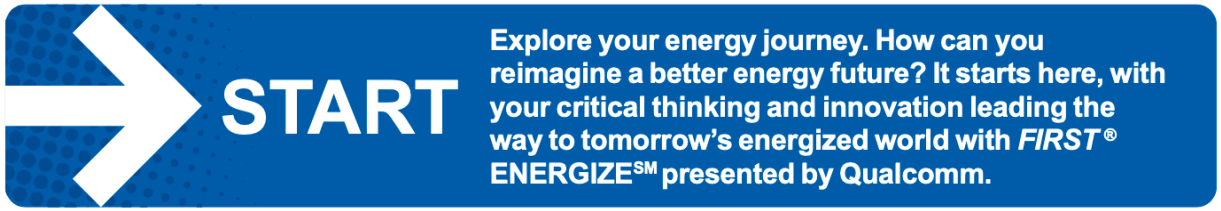
- 2011: Food Factor
- 2012: Senior Solutions
- 2013: Nature's Fury
- 2014: World Class
- 2015: Trash Trek
- 2016: Animal Allies
- 2017: Hydro Dynamics
- 2018: INTO ORBIT
- 2019: City Shapers
- 2020: RePLAY
- 2021: Cargo Connect
- 2022: SUPERPOWERED
- 2023: MASTERPIECE
- 2024: SUBMERGED

THE RUBRICS WILL GUIDE THE PROCESS

- **Identify**
  - Identify a problem, do background research, analyze existing solutions
- **Design**
  - Think of different ideas, select one and come with a Project Plan
- **Create**
  - Develop a solution including a prototype/model/drawing
- **Iterate**
  - Share, test, and collect feedback on the solution and make improvements
- **Communicate**
  - Create an effective and enthusiastic presentation for judges that explains your solution and its impact

BEGINNING 1	DEVELOPING 2	ACCOMPLISHED 3	EXCEEDS 4 *How has the team exceeded?*
IDENTIFY – Team had a clearly defined problem that was well researched.			
☐ Unclear definition of the problem	☐ Partially clear definition of the problem	☐ Clear definition of the problem	☐
⚙ Minimal evidence of research	⚙ Partial evidence of research from one or more sources	⚙ Clear, detailed research from a variety of sources	⚙
DESIGN – Team worked together while creating a project plan and developing their ideas.			
☐ Minimal evidence of an effective project plan	☐ Partial evidence of an effective project plan	☐ Clear evidence of an effective project plan	☐
⚙ Minimal evidence that development process involved all team members	⚙ Partial evidence that development process involved all team members	⚙ Clear evidence that development process involved all team members	⚙
CREATE – Team developed an original idea or built on an existing one with a prototype model/drawing to represent their solution.			
⚙ Minimal explanation of innovation in solution	⚙ Simple explanation of innovation in solution	⚙ Detailed explanation of innovation in solution	⚙
☐ Unclear model/drawing that represents the solution	☐ Simple model/drawing that represents the solution	☐ Detailed model/drawing that represents the solution	☐
ITERATE – Team shared their ideas with others, collected feedback, and included improvements to their solution.			
☐ Minimal sharing of their solution with others	☐ Solution shared with at least one person/group	☐ Solution shared with multiple people/groups	☐
☐ Minimal evidence of improvements based on feedback	☐ Partial evidence of improvements based on feedback	☐ Clear evidence of improvements based on feedback	☐
COMMUNICATE – Team shared an effective presentation of their solution, its impact on others, and celebrated their team's progress.			
⚙ Unclear explanation of the solution and its potential impact on others	⚙ Partially clear explanation of solution and its potential impact on others	⚙ Clear explanation of solution and its potential impact on others	⚙
⚙ Presentation shows minimal pride or enthusiasm for their work	⚙ Presentation shows partial pride or enthusiasm for their work	⚙ Presentation clearly shows pride or enthusiasm for their work	⚙

START WITH THE CHALLENGE PROMPT



SAMPLE FROM SUPERPOWERED

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. The Project Sparks (see Sessions 1-4) explore problems related to different energy journeys. You problem could come from a Project Spark, or it could be a different problem you want to solve.

Research your problem and solution ideas.

Explore energy sources and how energy is stored, distributed, and used in your community. Can you find ways to make part of your energy journey better? Can you improve one step to be more efficient, reliable, affordable, accessible, or sustainable? What solutions already exist? Are there any experts or users you could interview?

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

Use your research and explorations to either improve an existing solution used in your energy journey or design a new innovative solution. Can you make different energy technology choices? Make a drawing, model, or prototype of your solution.

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

The more you iterate and develop your ideas, the more you will learn. What impact will your solution have on your community?

Communicate your solution with a live presentation at an event.

Prepare a creative and effective presentation that clearly explains your Innovation Project solution and its impact on others. Make sure your whole team is involved in sharing your progress.

PICK A PROBLEM THAT IS MEANINGFUL

- Always think of a problem first
- The problem can be as small or big as you want
- Most students relate better to local problems that impact their lives

SAMPLE PROBLEMS FROM PAST YEARS

- **2011: Food Factor (food safety)**
  - Detecting spoilt milk
- **2012: Senior Solutions (senior citizens)**
  - Helping seniors remember where they left their possessions
- **2013: Nature's Fury (natural disasters)**
  - An early-warning ash detection system for airplanes
- **2014: World Class (education)**
  - A better way to learn to program the EV3 (EV3Lessons.com)
- **2015: Trash Trek (garbage)**
  - A more efficient way to recycle batteries
- **2016: Animal Allies (animals)**
  - Bats getting killed by wind turbines
- **2017: Hydro Dynamics (water)**
  - Detecting leaking pipes

CREDITS

- This lesson was written by Sanjay and Arvind Seshan
- More lessons available at www.ev3lessons.com and www.flltutorials.com