

2024 SOLAR STRUCTURE JUDGING SHEET

TEAM NAME: _____

LEVEL : Middle School: 4th--8th Grade High School: 9th-12th Grade

Functionality (0-10 points) _____

- Did the circuit work with sunlight? DC power supply? Lamps?
- How much power do your solar panels produce?
- What do the terms voltage, current, and power mean in relation to solar PV?
- What kind of solar panels did they use?
- Do they have any storage in their system?

Circuit Design (0-15 points) _____

- How many loads do they have?
- What types of loads do they have?
- Did they have to change their loads to work with solar?
- What changes have they made to their circuits over time?
- How detailed is their circuit diagram?
- Are their solar panels in series or parallel?
- Do they have any switches in their device? Did they make them?
- Did they try using a microcontroller?

Inspiration (0-15 points) _____

- Did they have an inspiration for their design? What was it?
- Were they trying to solve a problem or just make something cool? If so, what was it?
- Is the problem relevant and applicable to their daily life?
- Was there a great deal of research into the problem?
- Is using solar a benefit/necessary to solving the problem?

Creativity (0-10 points) _____

- How creative were the students in the construction and materials used in their structure?
- Did the students use any CAD or 3D printing?
- In what ways is their design innovative or special?
- How much time did they spend designing?
- How many models did they make?
- How did they capture their design?

Aesthetics & Materials _____ **0 to 15 Points**

- Is the device well built?
- Did they take their time building the device?
- Is it neat and tidy?
- What materials did they use?
- Where did they get their materials?

Independence (0-5 points) _____

- Do you feel that the students did this work themselves?
- Do you feel that they applied concepts they learned?
- If they did any CAD work or 3D printing, is it clear they did the work and not a coach or parent?

Presentation (0-10 points) _____

- What kind of documents did the students share? Was it a short report, engineering notebook, video, poster?
- What is your overall feeling about the document or presentation?
- Is the presentation thoughtful and does it show evidence of their work?
- Was the documentation and/or presentation neat and organized?
- Did the document show a progression of discovery?

Depth, Complexity and Clarity (0-5 points) _____

- Do you feel that the students practiced?
- Did all students take part in the discussion? Or did one student dominate?
- Do you feel like the students “knew their stuff” or were they just reading or making it up?

Total Points (0-85) _____