

Appendices

Note - Preliminary drafts, including project plans due **November 18, 2022** will not be scored. Preliminary drafts will be reviewed by mentors and feedback will be provided to each team.

December 19, 2022 - Electrical and Mechanical Drafts due by 5pm. Drafts will be scored. Late drafts are subject to point deductions.

January 21, 2023 - Electrical, Mechanical and Project Plans due by 5pm.

APPENDIX 1: Data Sheet

Racing the Sun Technical Data Sheet		
High School:		Team Photo <input type="checkbox"/>
Faculty Advisor:		
Team Members: _____ _____ _____ _____		
Driver and Back up Driver:		
Mechanical Features	Specifications	Additional Information
Length		
Width		
Height		
Weight (TBD on Test Day)		
Wheelbase		
Class		
Suspension		
Wheels		
Tires		
Brakes		
Electrical Features		
Operating Range		
Maximum Speed		
Other Features		

APPENDIX 2: Request for Variance

APPENDIX 3: Team Submittal – Mechanical Drawing Scoring

Mechanical Grading Sheet		
		Points
Turned in on time		
	By 5:00pm on due date	10
	More than 24 hours forfeits points	
Drawing Labels		
	Did the file name adhere to the rules?	5
	Were the team members all listed?	5
	Were the key students who worked on the drawing listed?	5
	Was the School Name included?	5
	Was the date of submittal listed?	5
Drawing Clarity		
	Were text and dimensions easy to read?	10
	For hand-drawings: were rulers, triangles or other guides used?	10
Drawing Requirements 1		
	Is there a full kart front view?	10
	Is there a full kart side view?	10
	Is there a full kart top view?	10
Drawing Requirments 2		
	Are the necessary dimensions shown?	10
	Are the tires shown or described with size and other details?	10
	Indication of Brakes/Type, location?	10
	Indication of Suspension/location or n/a?	10
	Gear Ratio indicated?	10
	Is the data sheet included w/proposed weight and other key items?	10
	Are the roll bar and roll cage shown?	10
	Is the location of the batteries indicated?	10
	Are the materials indicated?	10
	Are the key components shown or labeled?	10
	Solar Panel and attachment method shown and labeled?	10
	Was the ground clearance shown?	5
Points listed are for the DRAFT submittal. Points will be doubled for the Final Submittal.		200

APPENDIX 4: Team Submittal – Electrical Drawing Scoring

Electrical Grading Sheet		
		Points
Turned in on time		
	Turned in by 5:00pm on due date	10
	More than 24 hours late forfeits points	
Drawing Labels		
	Did the file name adhere to the rules?	10
	Were the team members all listed?	10
	Were the key students who worked on the drawing listed?	10
	Was the School Name included?	10
	Was the "Team Name" included?	5
	Was the date of submittal listed?	5
Drawing Clarity		
	For hand-drawings: was a ruler, triangle or straight edge used?	10
	Were dimensions easy to read?	10
	For hand-drawings: Were guides used for circles, squares, etc...	10
	Was the text easy to read?	10
Drawing Requirements		
	Are the wires color coded?	10
	Do the wires overlap excessively?	10
	Are all positive and negative connections shown?	10
	Is the wire guage indicated?	10
	Is the the fuse size indicated?	10
	Are the fuses in the proper locations?	10
	Would the kart function safely as wired?	10
	Are the components labeled correctly?	10
	Is there a kill switch	10
	Is the kill switch in the proper location?	10
	Points listed are for the DRAFT submittal. Points will be doubled for the Final Submittal.	200

APPENDIX 5: Presentation Score Sheet

High School: _____

Team Name: _____

Type of Kart: _____

Team on time w/all members present 75 points _____

Introduction of Team, Members and Roles 50 points _____

Should include school name, team name, teacher name, team member names, and team member responsibilities.

Description of Design Concepts 100 points _____

- **Structural elements** (25)
(Structural elements include length and width of kart, explanation of roll bar vs roll cage and triangulation, solar panel mount features, ground clearance, etc...)
- **Mechanical elements** (25)
(Mechanical elements include gearing, steering, brakes, wheels, covers and shields, etc...)
- **Electrical elements** (25)
(Electrical elements include fuses, wiring specifications, watt meter placement within electrical system, kill switch purpose and location, what the solar charge controller does, for example).
- **Use of solar energy** (25)
Describe how the solar energy from the panel is used by the motor. How many watts is the solar panel with full sun vs. cloudy day. Explain the function of the batteries, controllers, and the correct wire sizes).

Discussion of major challenges and fundraising 60 points _____

- 1) *What did you do for fundraising? Were you able to raise the funds you planned on raising? Why or why not?*
- 2) *Tell of your challenges with fundraising or building your kart and how did you overcome these challenges?*

Continued on next page

Organization of presentation (logical, coherent) 40 points _____

Organization of presentation should follow this rubric for easy scoring. Presenters should clearly state which topics they are presenting throughout.

Quality of presentation materials	40 points	_____
<i>Presenters should use Powerpoint or some other quality program for visuals. Visuals must be easy to read from a distance. Must contain relevant data. Must be visually interesting with relevant graphics that convey meaning. Teams should practice the presentation ahead of time to achieve clarity and a smooth presentation.</i>		
Involvement of team members in presentation	40 points	_____
<i>All team members are expected to be present. Teams must provide a valid explanation for absences. All team members should have some speaking role.</i>		
Response to Questions	60 points	_____
<i>Was the team able to answer the questions asked?</i>		
What did you Learn (Critical Thinking and Analysis)	60 points	_____
<i>Describe the primary lessons learned as a group and as individuals. Give examples of how this learning occurred. Demonstrate to the judges that the team engaged in critical thinking and problem solving. Show the judges the types of initiatives you took individually and as a team to learn what was necessary to compete in the competition. Explain how you can apply lessons learned in other areas of life.</i>		
Team attended full event/heard all presentations	75 points	_____
NOTEBOOK:	200 points	_____
TOTAL MAX POINTS	(800 points)	_____