



Bright House Solar Energy Cook-off Rules

The Solar Energy Cook-off is a two part competition encompassing design of a functional solar cooker and the creation of a dish cooked in this same cooker. This competition was developed to provide a real world solar thermal challenge for upper elementary and middle school students.

Competition Structure

Each team of 2 - 6 students is responsible for designing and building a fully operational solar cooking device and then cooking a dish of their choice with their device. The challenge is to design an effective solar cooker and to pair the operational capability of the cooker to the type of food cooked.

Eligibility requirements:

1. Each competing team consists of 2 - 6 students in grades 4 through 12.
2. The competition is divided into two divisions: elementary (grades 4 - 6), middle school (grades 7 and 8) and high school (grades 9 - 12). Teams of mixed grade levels will compete in the division of the highest grade level student.
3. Each school may send up to two teams total to the Solar Cook-off.

Construction requirements:

1. Teams may design and build any style of cooker—i.e. box, panel, parabolic, etc.
2. Teams may use any non-toxic materials they wish to build their solar cooking device.
3. Only students are allowed to build their cooker—**this is not a parent project**. However, for safety reasons, teams may have assistance with power tools, and may buy pre-cut parts such as glass or plexiglas. Adults are encouraged to monitor the use of tools.
4. The solar cooker is to be powered exclusively by the sun using solar thermal energy to heat the food. No additional power sources are permitted for heating food. For example, photovoltaic powered hotplates are not allowed.
5. All cookers must be large enough to cook at least (4) servings of the food to be judged.
6. All teams must complete two copies of the cooker Construction & Design Form; one is to be posted to the table on the day of the competition and the second given to the Solar Cooker Coordinator any time prior to technical judging.
7. Teams are expected to discuss their cooker design with a panel of judges, as well as be able to explain how solar cookers work.
8. Extra design points will be given for unusual designs and creative use of materials such as recycled items.

Cooking requirements:

1. Teams are required to prepare a recipe of their choosing and heat it using their cooking device.
2. The food cooked must be paired to the operational capability of the team's cooker, such as heat attainable, type of cooking (baking, frying), size of cooker, etc. Since the weather on the day of the competition is unknown and can vary, teams may want to plan for different types of cooking conditions.
3. Teams may use any kind of non-toxic cooking vessel or container that they wish.

4. Non-cooked items may be added as garnish to a dish after it has been in the cooker. However, this garnish must be specified in the printed recipe.
5. Recipe ingredients may not be added or subtracted the day of the event from those specified in the printed recipe given to the judges.
6. The team must cook at least four servings of their dish to be judged. Teams may if they wish, cook additional servings for the public to sample after the official judging.
7. The team's food will be judged on taste, appearance, creativity, complexity of recipe and general appeal.
8. The team's recipe(s) must be printed out and at least (3) copies provided for judging. These copies must be turned in at registration. If the team wishes, additional copies may be made available for the general public.
9. Teams must be able to discuss the cooking of their recipe with a panel of judges, as well as be able to explain why they chose this particular recipe.

Competition Day

At the competition, each team will have a 'booth' space, in which to cook their food, discuss their cooker with the judges and present to the general public. Each team is responsible for removing their cooker and any associated cooking debris from the premises once the competition is complete.

The teams are **judged** in two separate categories - **design and cookery**.

Judging Criteria–Design:

- Design Decisions--How well does the team understand solar cooking and solar thermal design? How well thought out are their design decisions? Was careful attention paid to parts selection and integration?
- Construction Technique--How well did the students construct their design?
- Function--How well does the design function as a cooking apparatus?
- Creativity--How innovative is the design? How creative is the use of materials? Is the design/project presented in a creative way?
- Durability – How well does the design stand up to human handling and variable weather conditions such as wind and humidity?

Judging Criteria–Cookery

- Suitability– Does the prepared recipe fit the capabilities of the cooker design? Was the team able to prepare it easily? Did the team finish cooking in a timely manner?
- Appeal–How appealing is the prepared dish in appearance and taste?
- Difficulty–Was the recipe too easy (i.e. a simple heat and serve)?
- Nutrition–How nutritious is the recipe? Does the recipe use a variety of ingredients?

Solar Cook-Off Awards

The awards will be as follows for each division:

- 1st, 2nd and 3rd Place Design
- 1st, 2nd and 3rd Place Recipe