

## **Solar Cook-off Rules**

The Solar Cook-off is a two part competition encompassing design of a functional solar cooker and the creation of a dish cooked in their cooker. It 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 8
2. The competition is divided into two divisions: elementary (grades 4 - 6) and middle school (grades 7 and 8). Teams of mixed grade levels will compete in the division of the highest grade level student.

### **Construction requirements:**

1. Teams may 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. Students must build their cooker—this is not a parent project. However, teams may have assistance with power tools, and may buy pre-cut parts such as glass or plexiglass. Adults are encouraged to monitor the safe use of tools.
4. The solar cooker is to be powered exclusively by the sun. No additional power sources are permitted.
5. All cookers must be large enough to cook at least (4) servings of the food to be judged
6. Teams must be able to discuss their cooker design with a panel of judges, as well as be able to explain how solar cookers work.
7. 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 with 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 uncontrollable, teams may want to plan for different types of cooking conditions.
3. Teams may use any kind of non-toxic cooking vessel or bag 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. Recipes 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 (6) copies, for judging, 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.

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 creative is the design? How creative is the use of materials?

### **Judging Criteria–Cookery**

- Suitability--How well does the team's prepared recipe fit the capabilities of their cooker design? Was the team able to prepare it easily? Did the team finish cooking in a timely manner?
- Appeal--How appealing is the team's 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:

- 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> Place Design
- 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> Place Recipe