



Solar Energy Cook-Off Virtual Rules

These rules are for the Solar Energy Cook-Off virtual competition, which does not include culinary judging. These rules are not valid for in-person Solar Energy Cook-Off competitions.

Student teams are responsible for designing and building a fully operational solar cooking device, and documenting the process on a team created web page.

The Solar Energy Cook-Off Virtual competition is open to teams of 1 - 6 students in grades 3 - 12. The competition is divided into three divisions: Yellow Division (3rd - 5th grade), Orange Division (6th - 8th grade), and Red Division (9th - 12th grade). Teams of mixed grade levels will compete in the division of the highest grade level student.

Note: If your team intends to later compete in the EnergyWhiz event at FSEC, it would be helpful to read the in-person rules; as the extra requirements for the culinary part of the competition, may influence your design choices.

Construction requirements

Teams may design and build any style of cooker (i.e. box, panel, parabolic, etc), using any non-toxic materials they wish. Only students are allowed to build their cooker; however, for safety reasons, teams may have assistance with power tools, and may buy pre-cut parts such as glass or plexiglass. Adults are encouraged to monitor the use of tools, but are not to actively participate in the design or construction of the cooker.

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.

The cooker submitted for design judging must be one created for this year's event, it cannot have been used in a previous statewide EnergyWhiz competition.

Team Web Page Submission

Each team will populate a web page on the Virtual EnergyWhiz site (using Wordpress) that showcases their solar cooker. These pages will be used to judge the cooker, and will be viewed by other students and the public during Virtual EnergyWhiz.

The web page must include:

1) Photo and Basic Info

- Team name
- School name
- First name(s) and last initials of students on the team (no last names on the public page)
- Grade level of each team member
- A photo of the completed cooker (use this as the Featured Image on your page)

2) Design Documentation

- Photos - a minimum of two photos of the cooker with one of them showing the cooker as it is being used to cook food, or tested (with a thermometer or temperature probe).

- A list of any help received from non-team members (i.e. Home Depot staff, internet, parents, teacher, etc). Include in this section any help you had with power tools, plans you downloaded. or items that you had pre-cut at a store or shop.
- A statement of where the idea for your cooker (or unique parts) came from, and why you chose that type of cooker.
- A list of parts used in construction, including any recycled parts used.

3) Test Results

Include a statement of the highest temperature that you measured with your cooker, with the time of day and the weather conditions (cloud cover) during the testing.

4) Team Design Video

Once your cooker is built, record a video that includes:

- Why the team chose this type of cooker
- How the cooker works when it is put out in the sun
- Special features of the cooker—close-ups are strongly encouraged
- Each team member's contribution to the project

This video will be included on your project web page and hosted on our Vimeo site. It may be edited and/or pieced together, or included on the web page in separate segments; however, it may not exceed 5 minutes total.

These are the minimum requirements for the web page. However, teams are encouraged to use the judging criteria as a guide to what extras they may want to include in their web page. For example, the web page **may** include:

- extra photos of the design, building and testing process
- videos of the team during the building, testing process or cooking with their cooker
- an explanation of unusual and/or recycled parts used in their cooker
- an explanation of the challenges encountered while building and testing their cooker, and what the team did to overcome the challenge
- project log - entries made on workdays documenting the engineering process
- list of internet sites used in the planning process
- photos and recipes of food cooked with the cooker
- any items that the team feels will showcase their cooker, or be helpful to the judges to pick them as the winning team!

Solar Cook-Off web page submissions are due approximately one week before the opening of the virtual event. The exact deadline will be communicated to the team and posted on the EnergyWhiz page.

Competition Week

During the week of Virtual EnergyWhiz, all Solar Cook-Off pages will be available for public viewing. Students are encourage to share their web page address with family and friends, and to visit other team pages.

Judging Criteria

Awards (1st - 3rd) will be given in each division will be given for **Best Design**.

Design judging includes:

- **Design decisions** - Does the team understand solar cooking and solar thermal design?

- Was careful attention paid to parts selection and integration?
- **Construction** - How well is the cooker constructed? Is the cooker sturdy enough to cook food? Is the design replicable?
 - **Function** – From the test results and design decisions the team made, how well is it expected that the cooker will function?
 - **Creativity** - How creative is the design and/or the use of materials? Were recycled materials used? Is the design and the web page presented in a creative way?
 - **Durability** - Has the cooker been designed for repeated usage? Can the cooker stand up to moderate wind, humidity and light rain?
 - **Web Page** - Does the contents of the team web page document the design, building and engineering process in a way that the viewer can see how the cooker works and see the special features that the team incorporated in their design? Is the web page arranged attractively?