



EnergyWhiz 2025

Solar Energy Cook-Off (SECO)

RULES



What is the SECO competition?

The Solar Energy Cook-Off (SECO) is a design and culinary competition. Each team is responsible for designing and building a fully operational solar cooking device, documenting the process on a team created web page, and also cooking a dish of their choice using their cooker. The challenge is to design an effective solar cooker and to pair the operational capability of the cooker to the type of food cooked. Expert judges will evaluate the cookers on their design and the culinary capabilities of the team.

Who May Compete

SECO is open to teams of two (2) to six (6) students in grades three (3) through twelve (12).

The competition is divided into three divisions. Teams of mixed grade levels will compete in the division of the highest grade level student.

- Yellow Division - 3rd - 5th grade
- Orange Division - 6th - 8th grade
- Red Division- 9th-12th grade

NOTE: Schools or clubs that have registered more than three SECO teams per division may be requested to select up to three of their teams to represent their organization at the culinary portion of the competition. This may be necessary depending on the number of overall teams enrolled given the timeframe for judging, the limited number of sun hours for cooking, and available area for cooker setup.

Important Dates

Events	Date
Project Webpages Due	April 4, 2025
Project Feedback Available to Coaches/Teachers	April 17, 2025
Web Pages Available for Public Viewing/Comments	April 18, 2025
Student/Team Names & Risk and Release Forms Due	April 23, 2025
EnergyWhiz Event at FSEC	April 26, 2025



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Requirements

Solar Cooker Design and Construction	
Teams shall:	
	design and build any style of cooker (box, panel, parabolic, etc.) to be powered exclusively by the sun using <u>solar thermal</u> energy to heat the food. No additional power sources are permitted.
	construct the cooker using non-toxic materials (some materials or paints give off toxic fumes when heated).
	seek adult assistance with power tools; safety first! Adults are encouraged to monitor the use of tools but are not to actively participate in the design or construction of the cooker.
	buy pre-cut parts or reuse items such as tempered glass or plexiglass, if appropriate.
	create a cooker large enough to cook at least (3) small servings of the food to be judged (tasted).
	submit and identify only one solar cooker for judging.
Note:	When several solar cookers are needed to prepare a recipe, cookers from previous years may be used. The cooker submitted for design judging should be identified and cannot be from a previous statewide EnergyWhiz event.
Culinary and Cooking with Solar	
Teams shall:	
	prepare a recipe of their choosing and cook it using their solar cooking device.
	pair the food cooked to the capabilities of the team's cooker, such as heat attainable, type of cooking (baking, frying), size of cooker, etc.
	plan for different types of cooking conditions, since the weather on the day of the competition can vary.
	cook at least three (3) small servings of their dish to be judged.
	use any kind of non-toxic cooking vessel or container.
	add any optional non-cooked items as garnish once the dish is fully cooked. This garnish must be specified in the printed recipe.
	notify the SECO administrative team prior to culinary judging, if the recipe ingredients need to be changed the day of the event from those specified in the recipe posted on the team web page.
	compost any plant or vegetable waste using the container provided at EnergyWhiz.

Web Page

Each team will populate a web page on the EnergyWhiz site that showcases their solar cooker. These pages will be used to judge the design of the cooker and will be viewed by students and the public.



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The web page must include:

1. Photo & Basic Info	
	Team name
	Name of the School
	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 <i>Featured Image</i> on your page). Be sure the project photo is clear/visible.
	List any past 'historical' information about your cooker team and/or school (this will be used by the announcer during EnergyWhiz when introducing you and your school). For example: <ul style="list-style-type: none"> ○ if your team has competed in the Solar Cook-Off before (how many years?) ○ if your school has previously competed in any other solar cooking event ○ past Solar Cook-Off awards won by the school ○ interesting fact(s) about your team, your recipe, or your school
2. Design Documentation	
	<u>Photos</u> - a minimum of two (2) photos of the completed cooker with 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, coach, etc). Include in this section any help you had with power tools, plans you downloaded or items that were cut at a store or shop.
	<u>Design drawings</u> (minimum of 2) that include measurements and dimensions.
	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 - will be hosted on our Vimeo site and included on your team web page. It may be edited and/or pieced together or included on the web page in separate segments (up to 5 minutes, total).	
	Once your cooker is built record a video that includes information on: <ul style="list-style-type: none"> ○ 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



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5. Recipe(s) - Include the recipe(s) that you will present to the judges at the competition.	
	Teams may want to plan/test two types of recipes for different solar thermal conditions (full sun and partly cloudy). You may include more recipes than are eventually used; however, the recipe that is presented to the judges <u>must</u> be included on the web page and a physical copy submitted at check-in on the day of the Culinary Judging.
	An online fillable recipe template will be available on the EnergyWhiz.com website.
	The following recipe information is required at a minimum on the physical copy submitted at check-in: <i>Along the top of the page:</i> <u>TEAM Name</u> <u>School & Location (City)</u> <u>Teacher/Coach Name</u> <i>Below the above, in the body of the page:</i> * Title of Dish * Number of Servings * Solar Cooking Time * List of Ingredients & Amounts (Measurements) For example: 2 C Fresh Green Beans FFF * Directions Fun Fact: (Example) This is our first time participating. Our team members are all vegetarians and care about the environment. We learned that veggies are delicious especially when cooked in a solar oven!
	Indicate on the recipe with the letters “ FFF ” next to any ingredients that are grown by the team, Florida produced or Florida harvested (Fresh From Florida)
	List a Fun or Interesting Fact about the team, their school, recipe or their solar cooking experience on the recipe card. This will be spoken by the Announcer when the team presents their dish to the Culinary judges for tasting.
Note:	If multiple recipes will be tasted by the judges and the team has created a Menu, the list of menu items should be included. For example: Entrée: Green Beans with Garlic and Mushrooms, Drink: Lemony Sun Tea, Dessert: Strawberry Shortcake

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:

- * 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 and what the team did to overcome them
- * project log - entries made on workdays documenting the engineering process
- * list of internet sites used in the planning process
- * any items that the team feels will help the judges to pick them as the winning team!

During the week leading up to, and during EnergyWhiz itself, all SECO web pages will be available for public viewing. Students are encouraged to share their web page address with family and friends, and to visit other team pages.



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Competition Day - Time To Cook!

Note: Because competitions run concurrently, individual students may only participate in two (2) EnergyWhiz competitions as team members.

Check in – Solar Energy Cook-Off Headquarters Tent

Upon arrival, the coach or teacher (or the team's adult designee) will need to check in at the SECO Headquarters tent near the solar cooking field, **turn-in the team's recipe** that will be presented to the culinary judges and get their information packet, containing:

- Schedule
- Booth assignment (minimum 12' x 12' with a 6' table)
- Step by step (procedural) directions for the day
- Table sign
- Certificates of participation

Food Prep and Cooking

The team may setup their cooker(s) in their assigned area any time after check-in and can begin cooking. Each booth will have a table for food preparation and for plating their finished product. An appliance station will be available for team use.

Judging

During the food prep and cooking time, teams will be visited by various judges who will ask questions and evaluate the team's project based upon the rubrics that follow. Each team should be available to also talk to the public about their cooker and menu items.

Food Tasting

Food will be plated and presented to their division's three judges for tasting at the team's designated time and location according to the schedule, unless notified otherwise the day of the event. For planning purposes, the Yellow/Orange division times will not be earlier than 12:30, and Red Division times will not be earlier than 12:00 noon. Further information on this will be given at check-in.

Cancelation

In the event of severe inclement weather, the culinary portion of the competition may be canceled. That decision will be made by the administrative team between 11:30 and 12:00 on the day of the event. Judging for the other awards will continue. SECO will not be canceled for cloudy weather; teams will be expected to do their best in all weather conditions except when rain or lightning is present.



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Clean-up

Each team is responsible for removing their cooker and any associated cooking debris from the premises once the competition is over. A composting container will be provided to each team. A large compost bin, as well as recycling and trash bins will be located throughout the area for your use.

NOTE: No pets except service animals will be permitted at EnergyWhiz.

Evaluation and Judging

SECO projects are reviewed online by multiple judges and provided with an initial design score based on the rubrics that follow. Final review and judging for all other awards occur in-person at EnergyWhiz.

Best Design - 1st - 3rd Place Awards: Given to top three scoring teams in each division.

Culinary - 1st - 3rd Place Awards: Given to top three scoring teams in each division.

Wow! - 1st Place only, to top team in each division.

Fresh From Florida – 1st Place only, to top team in each division.

CATEGORY	BEST DESIGN	MAX POINTS
Design Decisions:	Does the team understand solar cooking and solar thermal design? Was careful attention paid to parts selection and integration?	15
Construction:	How well is the cooker constructed? Is the cooker sturdy enough to cook food? Is the design replicable?	15
Function:	From the test results and design decisions the team made, how well is it expected that the cooker will function?	13
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?	15
Durability:	Has the cooker been designed for repeated usage? Can the cooker stand up to moderate wind, humidity and light rain?	15
Craftsmanship:	How well constructed is the oven overall? Was care taken in the way the car was constructed? Is it sturdy?	12
Web page:	Do 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?	8
Video:	Is the video component of the webpage clear and understandable? Did the team fulfill the video requirements? Did they communicate effectively?	7
	Design SCORE	100



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CATEGORY	CULINARY	MAX POINTS
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?	25
Appeal:	How appealing is the prepared dish in appearance? How does it taste?	25
Difficulty:	Was the recipe too easy (i.e. a simple heat and serve)?	20
Creativity:	Does the recipe use a variety of ingredients? Has the team shown creativity in their recipe, cooking technique, or presentation?	20
Web page:	Is the recipe included on the webpage, along with any unique or pertinent recipe or food-related decisions?	10
	Design SCORE	100

CATEGORY	WOW!	MAX POINTS
Presentation:	How well does the team communicate? Are they enthusiastic? Do they approach & interact with the crowd?	25
Impression:	Does the team have a unified appearance (i.e. team t-shirts, theme, etc.)? Do they give a good first impression? Do they make you want to taste their food? Is their cooking table attractive?	25
Message:	How well does the team convey the message that solar cooking works? How well does the team know their subject?	25
WOW! Factor	How creative is the team? Do they go above and beyond the average to promote solar cooking, their recipes, their school/team?	25
	Design SCORE	100

CATEGORY	FRESH FROM FLORIDA	MAX POINTS
Recipe:	Does the prepared recipe highlight Fresh from Florida commercial or homegrown products and/or produce?	40
Availability:	How well does the team understand product and/or produce seasonal availability?	30
Benefits:	Do the students understand the benefits of using Fresh from Florida products and produce?	30
	Design SCORE	100

Good Luck to All SECO Teams!

