

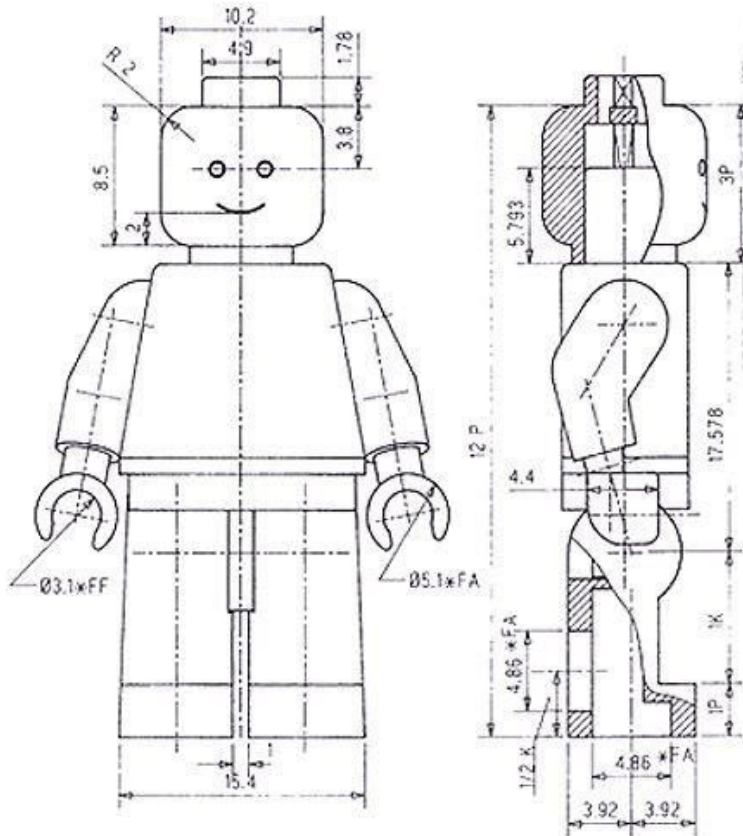
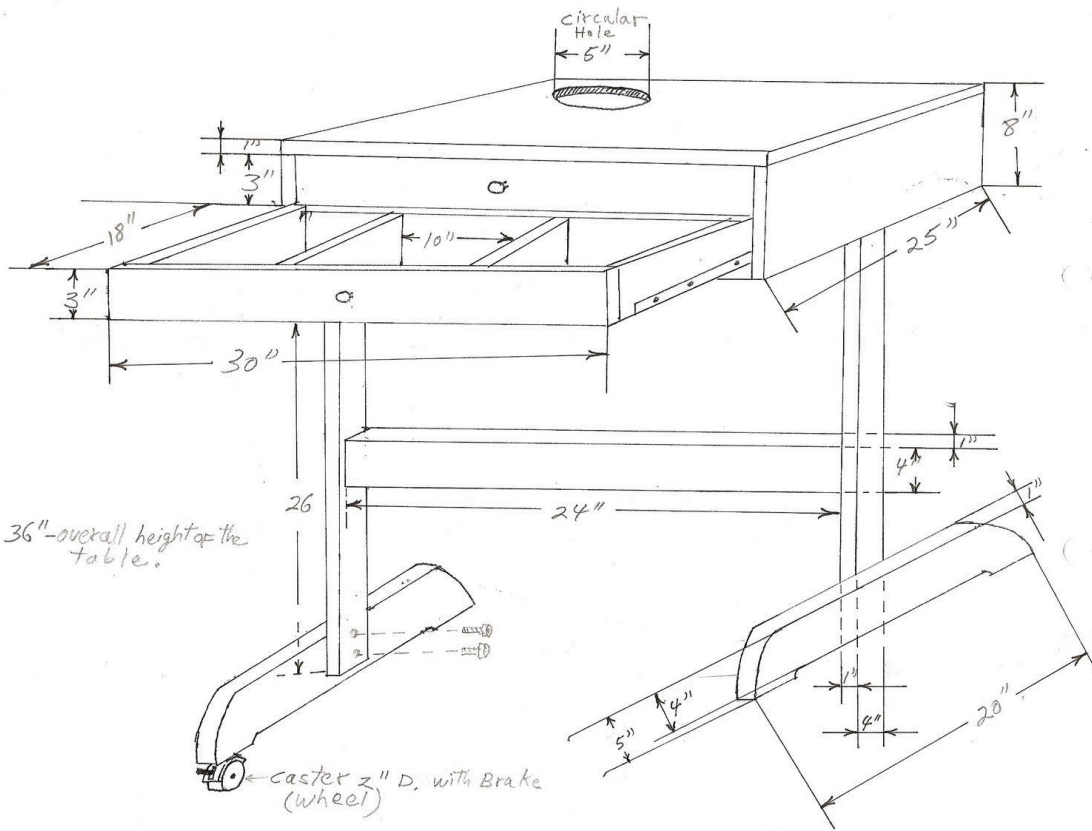
Solar Cooker Design Notebook Check

****do not build anything, this is just a design****

Category	1	2	3	4	5	Score
Titles and Names	Missing 4 + parts.	Missing 3 parts	Missing 2 parts	Missing 1 part.	Team Name, Team Members names, Role of each member and their strengths, Team Leader's science teacher	
Drawing	Missing 4 + parts.	Missing 3 parts	Missing 2 parts	Missing 1 part.	<ul style="list-style-type: none"> - Has a scale drawing of their cooker. - Includes units of scale and units for actual cooker - Includes type of materials they plan to use. - Includes where they plan to purchase materials or where they will find them. - Drawing is neat and easy to understand. 	
Research Section	Missing 4 + parts.	Missing 3 parts	Missing 2 parts	Missing 1 part.	<ul style="list-style-type: none"> - Research section includes multiple types of cookers and what each type is best for cooking. - Includes 4 paragraphs. - Includes at least 3 websites. - Has first page of each website printed out and attached into notebook. - Includes a section about which cooker they are choosing and why. 	
Food Plan	Only discusses type of food, may not have actual recipes listed out.	Missing 3 recipes/explanation	Missing 2 recipes/explanation	Missing 1 recipe or the explanation	<ul style="list-style-type: none"> - Three possible recipes are written out: including ingredients and steps. - Explanation of why each recipe was chosen. 	
Creativity	No theme evident	Missing 3 parts of theme	Missing 2 parts of theme	Missing one part of theme	<ul style="list-style-type: none"> - Has specific theme for project: - Recipes - Outfits/costumes - Paint/decoration of cooker - How they will serve the food 	
					Total	/25

COMMENTS:

Technical Drawing examples:





Solar Cooking Team 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 middle school students.

Competition Structure

Each team of 2 - 4 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 - 4 students in grades 6 , 7 or 8
2. The competition is divided into separate divisions for each grade level.

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. All teams must complete a cooker Construction & Design Form and post it on their table the day of the competition.
7. 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.
8. Extra design points will be given for unusual designs and creative use of materials such as recycled items.
9. All teams will be required to submit a Data notebook and Construction and Design Form to be able to compete.

Data Notebook

1. Required in order to compete the data notebook must be completed and turned in on time.
2. Must have team name and members' names along with their teachers' names on front.
3. Must have who helped you during the process and how they helped.
4. Must have dated entries for each time you worked on the cooker and what you did during that time.
5. Must have a scale drawing of with measurements and units and parts used.
6. Must have actual pictures of cooker and cooking process.
7. Must include test data including temperature of cooker and outcome of cooking process.
8. Must include where your ideas came from (be specific).
9. What was your greatest challenge and how did you overcome it?

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.
IMPORTANT!!
3. Teams may use any kind of non-toxic cooking vessel or bag that they wish.
4. Teams must show judges that they can boil 75ml of water.
5. 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.
6. Recipes ingredients may not be added or subtracted the day of the event from those specified in the printed recipe given to the judges.
7. 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.
8. The team's food will be judged on taste, appearance, creativity, complexity of recipe and general appeal.
9. The team's recipe(s) must be printed out and have least three (3) copies of each recipe, for judging, turned in at registration. If the team wishes, additional copies may be made available for the general public.
10. 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 (minimum 10'x10') 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–Recipe (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 grade level:

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



Solar Cooking
Team Recipe Form

Submit three (3) copies of each recipe; use one form per individual dish. If you have two dishes, you'll turn in a total of six (6) sheets of paper. **MAKE SURE YOU KEEP AN EXTRA COPY FOR YOUR TEAM.**

Submitted by (team name) _____ Team Number _____ Grade _____

Name of Recipe _____

Approximate cooking time _____ Type of cooker _____

Source of recipe _____

Ingredients (list amount of each; for example, ½ cup chopped onion):

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Directions for cooking:

List any ingredients what were cooked before arriving at the competition:
