

Solar heated grill

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Solar Heated Grill ABSTRACT This study aimed to find out if an old shoebox and a thick tin foil can be converted to a more useful piece of cooking equipment. The feasibility of reflective solar heated grill that is built from a cardboard box, tin foil, and posterboard as an alternative cooking equipment was studied in this research project. The cardboard box was cut and shaped. The tin foil is settled in the middle making it look like a slide. We go outside in the heat of the sun. The barbecue sticks were placed in the spot where reflection of the sunlight focuses on the hotdog. Just like a real skewer the hotdog were cooked therefor minutes. Tasted it. and voila. real hotdogs on stick just like mom used to cook.

General Objective: This study thru physics aims to find out if an old shoe carton box can be useful to make an alternative cooking machine.

Materials/Equipment: 1. Two pieces of heavy cardboard (like the side of a cardboard carton). The first piece must be at least ten inches square and the second smaller piece must be at least four inches by five inches. 2. A piece of light posterboard eight inches wide and sixteen inches long. 3. Twelve-inch wide aluminum foil. (You will use about 32 inches of the material.) 4. Some masking tape. You may experiment with other types of tape.) 5. Nine inch long sticks about 1/16 inch in diameter. You may also use lengths of heavy wire.

Procedure Select a long narrow box; the longer the box the more heat collection is possible. Choose a focal length between 5" and 10" and design a parabolic curve as seen in the picture. One template could be used for all the cookers. Trace the curve on the open end of the box so that it is centered and straight. 2. Cut out the curve with a utility knife. Stress the importance of being exact. Measure

and cut a piece of posterboard that will fit flush against the opening to the box.

Attach this with tape beginning at the center and working toward the edges. Cover the curve with white glue and apply aluminum foil shiny side out. Start in the middle and smooth toward the edges. Try not to wrinkle or fold the foil; you want it as smooth as possible. Use two scraps of cardboard taped to each side as supports. Using the sun or a projector light, test the focal point. There should be a bright spot where light is concentrated; mark this spot and punch a hole for the skewer. Use a section of a coat hanger from which the paint has been removed for a skewer.