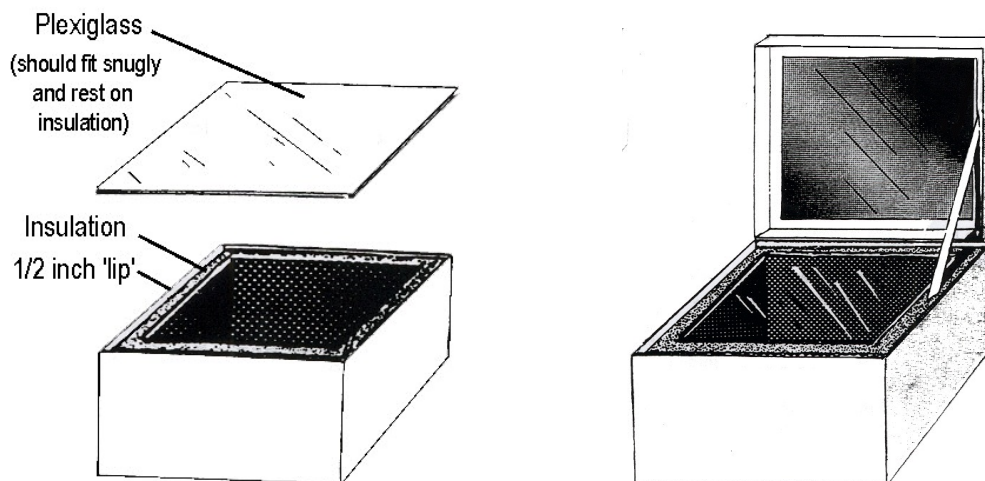


File Box Cooker

Materials

- file storage box, or other box 12" x 15" x 10"
- foil backed foam insulation board, approx. ½ sheet per oven
- plexiglass, pre-cut to 12" x 15"
- aluminum duct tape, 20 feet
- black construction paper, 12" x 15"
- aluminum foil or pieces of reflective mylar (emergency camping blanket), 18" x 21"
- scissors
- wooden dowel, stick or pencil



Procedure

1. Cut insulation material. Each oven requires:
 - (1) 12" x 15"
 - (2) 12" x 9 ½ "
 - (2) 15" x 9 ½ "
2. Put 12" x 15" piece of insulation inside the box on the bottom.
3. Put insulation around all the walls of the inside of the box.
4. Tape all seams: bottom, sides, and around the inside top of the box with aluminum tape.
5. Cover the inside of the box lid with foil for a reflector.
6. Cover the inside bottom of the oven with black construction paper.
7. Place the glazing on the top of the oven. The glazing should sit firmly and the box should be airtight. If not, adjust the sides.

8. Attach the box lid by one long edge to the oven with an aluminum tape ‘hinge’. The rod or stick is used to adjust the tilt of this lid to capture more sunlight.

The common problems to avoid that can cause the ovens not to seal tightly and therefore not hold in heat:

- all seams are not sealed tightly with aluminum tape. Make sure that all the seams are covered, both inside and around the inside top opening of the oven. The box lid is used as a reflector, so the tape is not critical there
- the plexiglass glazing does not sit tightly on the top of the oven. Make sure that the top edges of the insulation are level and flat. Low spots may be filled in with extra pieces of aluminum tape
- sides of boxes are squeezed in while being taped, making the top opening too small for the plexiglass to fit.

How to cook in your box cooker

1. Set the oven facing the Sun.
2. Adjust the tilt of the oven (objects can be placed under one edge), and the tilt of the reflector (with a rod or stick) so that the Sun’s rays are directed into the body of the oven.
3. Mix or prepare the food to be put in the cooker according to the recipe.
4. Put the food in a covered dish, or cover tightly with plastic wrap. Do not cover your food with aluminum foil—it will reflect the sunlight away from your food! You can cook in any non-reflective pot, however thin black metal pots work best, and shallow ones work better than deeper ones.
5. Lift glazing, set the dish and an oven thermometer on the bottom of the oven, and replace the glazing (you may tape around the edges of the glazing if the box is not airtight).
6. Move the cooker periodically (every 20 minutes or so) to follow the sun as it moves across the sky.
7. When food is done, be sure to use a pot holder to remove the glazing and also the food.

Solar Cookers can get extremely hot!