

MATERIALS NEEDED FOR SOLAR OVEN

1. **BOX #1:** Any size you want for inside of oven (17" x 17" is average, 6" - 8" depth - however, 24" x 24" x 9" deep - 576 sq. in. surface - is optimum size for "heat gathering". This size oven will "cook" even on overcast days)
2. **BOX #2:** 7" longer and wider than box #1 (You can build your own for size, with cardboard and tape - best if not more than 3½ - 4" deeper than box #1)
3. **EXTRA CARDBOARD** big enough to make the lid - Box #2 size
4. **GLASS:** 2 pieces (each pane of glass is single-strength to let in maximum sunlight)
Cut glass 2" bigger than box #1 (1 inch larger all the way around)
5. **METAL TRAY:** Cut sheet metal to match the inside dimensions of Box #1
6. **KNIFE:** razor sharp utility knife
7. **ALUMINUM FOIL:** heavy duty
8. **GLUE:** heat resistant; easily applied with brush if diluted (approx. ⅓ water)
9. **TAPE:** brown PAPER tape or PAPER package tape with nylon reinforcing threads
10. **INSULATION:** fiberglass batts or crumpled up newspaper
11. **LID STABILIZERS:** lid prop, lid prop footing, and cord adjuster
12. **TAPE MEASURE AND PENCIL**
13. **STRAIGHT EDGE:** carpenters square or yardstick
14. **WOOD TO CUT ON:** at least the same length as box #2
15. **SCISSORS:** to cut tape and foil
16. **OVEN THERMOMETER**

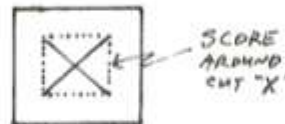
CONSTRUCTION OF OVEN

I. BOX #1

- A. Foil outside with shiny side glued to box
- B. Foil inside with shiny side showing (DO NOT glue on inside of box!)

II. BOX #2

- A. Box to be made with all six sides sealed closed;
Glue or tape flaps down on top side of box first
- B. Cut an "X" in top of box #2 (the "X" should be ¼" longer and wider than Box #1)
- C. Score cardboard to help flaps fold down
- D. Now reach in and glue or tape flaps on box bottom, (it's a little cramped but can be done!)



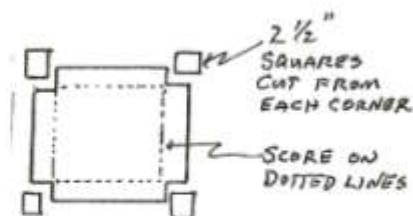
III. INSULATE BOX #2

- A. Put insulation on the inside sides (all 4) of box #2 (again, a little cramped) and fold flaps down
- B. Make an X "Christmas tree stand" and place in bottom of box #2. This will support box #1.
- C. Put insulation around "Christmas tree stand" in bottom of box #2

IV. **CAREFULLY** put box #1 inside opening prepared in box #2

V. **LID** (Optional **SIDE REFLECTOR PANELS** instructions on page 3)

- A. Cut flat piece of cardboard 5" longer and 5" wider than box #2
- B. Cut 2½ squares out of all 4 corners
- C. Score cardboard so flaps will fold
- D. Fold 3 sides and tape 2 corners
- E. Glue and tape remaining flap to box on outside and inside
- F. Glue foil on inside of lid



VI. **CUT GLASS** (2 pieces) 2" longer and wider than box #1

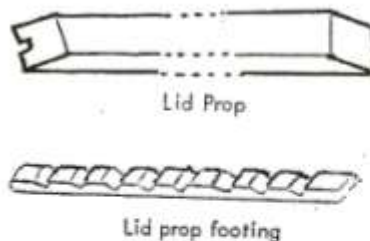
- A. Place ¼" strips of cardboard between pieces of glass. (make sure glass is clean!)
- B. Put tape on outer edges of glass. **Do not** let tape show over foil edge of box #1 (tape should be no wider than 2")

VII. **METAL TRAY** Cut sheet metal to match the inside dimensions of Box #1

- A. Smooth the cut edges with a stone or file. Scratch a line ¼" from all edges of metal sheet.
- B. Fold edges up with pliers. Hammer against a brick or 2x4 to even out the bends.
- C. Corners may be fluted or cut, folded and soldered.
- D. Scrub metal with vinegar or paint thinner, rinse well, and paint with black, high heat paint.

VIII. **LID STABILIZERS**

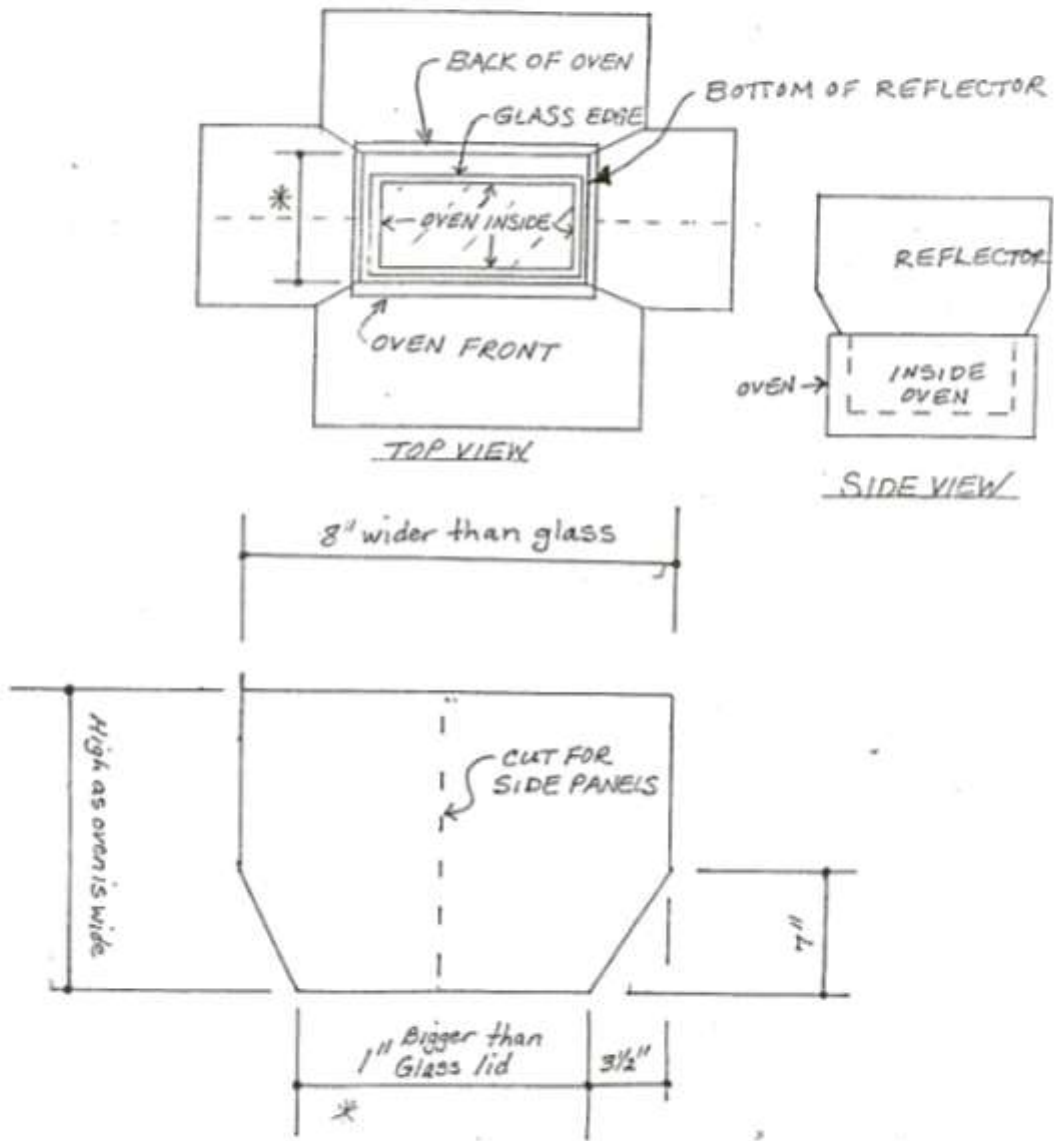
- A. Glue a small wood block (½" h x ¼" w x 2" long) to outside, upper right-hand corner of lid. Screw a screw-eye through the lid (from inside) into the wood block. (if you use plywood it won't split)
- B. **LID PROP FOOTING:** On a ½" h x ¼" w x 12" long section of wood cut a series of ¼" deep cuts 1" apart. Then chisel, whittle or rasp one side of each cut to make the prop footing notches. Glue footing onto the edge of oven top, to the right of the glass - running from the front of box towards the rear.
- C. **LID PROP:** cut a stick ½" x ¼" x approx. 24" long to serve at the lid prop. Taper cut one end to fit the notches on the prop footing.
- D. **CORD ADJUSTER:** Screw another screw-eye into the prop footing near the front end. Tie a length of nylon cord to this screw-eye, then through one hole in the cord adjuster (see picture) then thread the cord through the screw-eye in the corner of the lid, then back through the other hole in the cord adjuster and tie it off there.
- E. **FOCUS THE OVEN:** Set the oven in the sun so the shadow of the lid prop lies on top of the lid prop footing. Position the reflector lid so that the maximum reflection of sunlight is thrown into the oven. Stabilize the lid with the prop and tighten the cord adjuster.



- VI. **CUT GLASS** (2 pieces) 2" longer and wider than box #1
- A. Place $\frac{3}{4}$ " strips of cardboard between pieces of glass. (make sure glass is clean!)
 - B. Put tape on outer edges of glass. **Do not** let tape show over foil edge of box #1 (tape should be no wider than 2")

SIDE REFLECTOR PANELS (OPTIONAL)

* for side reflectors measure from back of oven to 1" in front of glass



REFLECTOR PANELS (4)

I received this information from:
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