

SOLAR WATER HEATER & PASTEURIZER MADE FROM EVERYDAY RECYCLABLES

TOOLS & EQUIPMENT:

Scissors, Knife, Glue, Tape
Hot Glue gun
Thermometer*

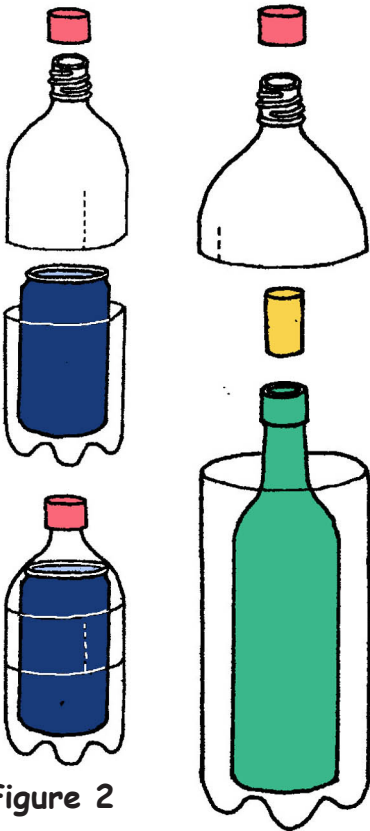


Figure 2

1 liter clear plastic bottle with 12 oz. dark metal can.

Figure 3

Use the 2 liter plastic bottle with the brown 12 oz. bottle (see reflector)

Use the 3 liter plastic bottle with the dark wine bottle

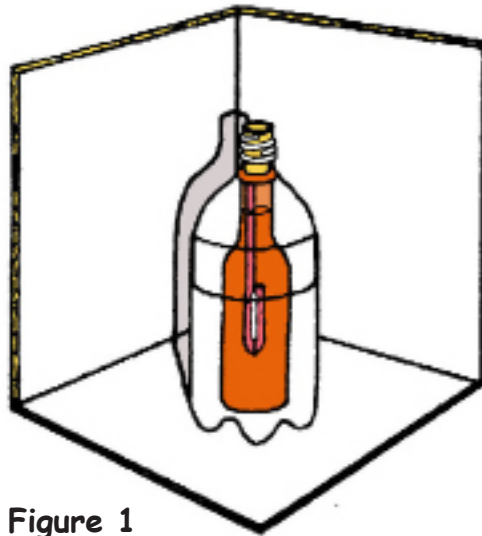
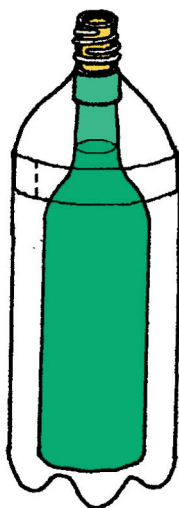


Figure 1

Solar Reflector:

(Fig. 1) Start with a cardboard box. Cover two sides and the bottom with aluminum foil or the reflective plastic inside of snack or chip bags. Use wheat paste, glue or tape to attach reflective surfaces (some labels on bottles etc. can be peeled off and used as tape). Place bottle on solar reflector in sun. Keep bottle shadow centered on back of solar reflector.

Water Heater and Pasteurizer:

(Fig.2) Cut the 1 liter clear plastic bottle in half making a vertical cut in the overlap area of bottle top to help with insertion (see dotted line). Get a 12 oz. Aluminum can with a dark label or coat it with carbon black from a fire or candle. Fill the can with water and place in bottle bottom. Insert bottle top and push down until it touches the can. Insert pasteurizer indicator and screw on lid.

(Fig.3) Cut open the 2 or 3 liter clear plastic soda bottle and make a vertical cut (see left). Fill glass bottle with water. Insert pasteurizer indicator and close bottle with cork. Place into plastic bottle bottom. Put plastic bottle top over cork and push down to locked in place. Screw on lid (optional)

MATERIALS:

Corrugated cardboard box 18" square or larger.
Aluminum foil or reflective plastic on the inside surface of snack bags.
1, 2 and 3 liter clear plastic sodas bottles. with lids.
12 oz. Aluminum can,
12 oz. brown glass beer or pop bottle.
750 ml dark green or brown glass wine bottle, with cork
8" Plastic soda straws. **
Hot glue sticks**

Pasteurizer indicator options:

*A thermometer is of course the first choice. As is the WAPI indicator available from www.solarcooking.org

Straw Pasteurizer Indicator

(Fig.4) A disposable pasteurizer indicator can be made by taking an 8" plastic soda straw (see below) and folding it back on itself (A). Hold straw surfaces together while applying a generous amount of hot glue into the groove between straws (B). Use a general purpose, multi-temperature hot glue with a softening point of 178 F. Hold straws together until cool (be careful, hot glue burns skin). Turn straw over and repeat on the other side.

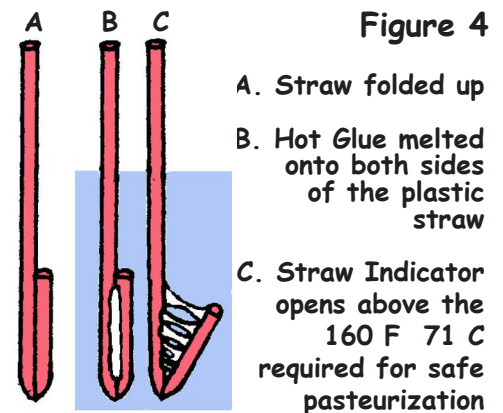


Figure 4

- A. Straw folded up
- B. Hot Glue melted onto both sides of the plastic straw
- C. Straw Indicator opens above the 160 F 71 C required for safe pasteurization

IMPORTANT: When inserting the Straw Indicator make sure the water level covers the straw (B) and (C) (see above).

*Thermometer test your indicators before putting into general use,
**Not all hot glues & plastic straws are guaranteed to react the same.

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