

Adventures in solar ovens, from Elizabeth Nitz:

Advice to those of you who haven't created your solar ovens yet:

1. Cut it out. then fold it. THEN cover in tinfoil. I know you're excited, but foil shreds when jostled around and hides otherwise very helpful fold line markers!
2. Fold using a straight-edge, not your elbow. You end up with a weird parabolic curve instead of a slick angle.
3. Don't be afraid to extend the inner slits so your poorly folded top has a prayer of fitting into them.
4. Liberally use duct tape -- anything this awesome can't be good for the planet, but nothing will move when you're done.
5. Box cutters are great for boxes, but get some scissors for the foil!
6. Once you've jammed it all together, fixed tinfoil rips and added another roll of duct tape, gracefully accept that it's never going to come apart again and be folded neatly into a backpack.
7. Stand back and shake your head (with any gathered onlookers) and wonder just how useful this thing could possibly be!

Stay tuned for my next segment... attempts at cooking in a solar oven!

Elizabeth

Jeff Graef's additional comments:

I have a few more things to mention that I didn't get to present and a few additional comments to add to Elizabeth's excellent comments from her experience.

The first is, solar cookers are used worldwide as an effective way to pasteurize water, milk and food. Although this isn't usually a pressing need in our culture, it is life saving in many parts of the world. It is handy in our culture when there are power failures coupled with water main problems. It is also handy if you go camping and / or backpacking and don't want to carry all the water you need. You pasteurize water if it gets up to 149 degrees F (even for a moment). You can pasteurize milk and most food by heating it to 160 degrees F. Does this kill ALL micro-organisms: no, but it kills all the ones likely to harm your health. You can stand around and watch a thermometer, or use a clever appropriate technology invention called a WAPI (Water Pasteurization Indicator). You can buy one for \$6.00 from Solar Cookers International (much cheaper in bulk purchase). It is a clear tube with a special soy wax that melts at 149 degrees and slides to the other end of the tube. (See diagram copied to the end of this email). Almost any solar cooker will hit 149 degrees F in bright sun.

As far as making solar ovens. I have a few additional comments. If you want to fold it, it is easier to make this work if you obtain thinner corrugated cardboard than the nice heavy cardboard we received last week. You can use the edge of a spoon, handle of a butter knife, or other rounded (not sharp) object along a straight edge to "score" (sort of mash) but not cut the cardboard on both sides (front & back) of the fold. The slots are a sort of critical cut. Start smaller than you need and gradually enlarge with a really sharp razor blade, checking as you go. If you overshoot, you can always glue cardboard on the back to recut to "thin" the slot back down. Duct tape adhesive tends to get loose at solar oven temperatures and if used interior to a solar oven (like a box oven) can get too hot and outgas especially the plastic on the outer layer. I suggest using instead, 3 inch (or so) strips of fabric glued fairly heavily on both sides with 50 / 50 water white glue mix. If you happen to have access to a pinking shears, this will reduce unraveling (but is not essential -- just use extra glue). The glued fabric strips can be used to reinforce the fold areas and used to patch together cardboard that is too short. I recommend cotton (as opposed to synthetics). The fabric thickness is not critical but I found that the thickness of a light denim works great. (Something to do with that old pair of pants you'll never wear again). If you want the thing to look nicer, you can let the foil run wild around the edges and let it dry and then fold around and glue a 1/2 inch trim edge around the back of the solar cooker. Full strength white glue works good for this.

The handout has some good guidelines for cooking. A few things from my experience: rice and other grains CAN overcook so start checking them around double the usual cooking time, adding a little more water than the standard grain recipe(s) seems to help. Baking potatoes works better if you pick smaller potatoes. Beans take a really long time to cook. To increase your success rate, soak overnight, bring to a boil on the old fossil fuel stove and then put the pot in the cooker for an all-day cooking using the maximum available sun hours. Remember, you don't need to add water to cook fruits and vegetables. I especially like to cook all in one stews and soups. Just cut up all the vegetables, add broth or a home-canned jar of tomato, add spice, shake or stir and just ignore it for 2-3 hours and then eat (or put in on the stove if the sun disappeared). You do need to have a black or dark colored pot (or jar) and a clear plastic bag or clear outer jar with this cooker. (And remember to turn the cooker towards the sun once in a while.)

Happy eating,

Jeff Graef

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enc: see copy of WAPI graphics below:

WAPI

<http://65.108.108.197/catalog/waterpasteurizationindicatorwapi-p-42.html>

