

No Power Cookers- Instructions and Directions

www.ldsprep.org

STOVE-IN-A-CAN

Supplies:

1 new quart size Paint Can with lid

1 roll Toilet Paper (cheap kind)

1 ½ bottles 70 % rubbing alcohol (Isopropyl not ethyl)

12oz Can (chunk chicken type) w/ holes drilled in and vents cut around bottom

Remove cardboard roll from inside toilet paper and discard roll. Fold TP to fit inside can. SLOWLY pour rubbing alcohol over TP until covered. Cover tightly with lid. Stores @ 5 years. Burns about 6 hours. **ONLY FOR USE OUTDOORS.**

Emergency Outside Cooking

Place can heat resistant surface before lighting...bottom will get very hot.

Pry lid off and light with match....

Use can with holes, set on top, to provide air to fuel.

Add 1 c. rubbing alcohol after every 3 hours of use. (Douse flame to add)

To extinguish, cover with lid.

HINT: Food will get to about 160°, not boiling with this method.

IMPORTANT: Keep lid on as tightly as possible to prevent evaporation

Icebox Cooking

(From Emergency Food in a Nutshell)

For cooking soups, rice, stew, beans, etc. Uses 70% less fuel than conventional cooking.

Also great for picnics, reunions, etc.

Caution: Food **must remain above 140°**. Test Icebox using pot of boiling water, ½-2/3 full. After 6 hours check temperature of water (w/thermometer)(**our water boils at 106° F in AV**). If water is cooler add more insulation. Test again. Also if box is very cold, bring to room temperature before using. Cover cooker with heavy blanket.

Supplies:

Sturdy container w/lid (cardboard box 4" larger than pot or ice chest- 1-2" larger than pot)

A pot w/ tight fitting lid

Lining (flannel, fleece, wool) NOT for ice chest

Insulation (hay, sawdust, blanket, towel, paper)

Cushion or pillow

1) Line container (Ice chest does not require lining)

2) Fill with insulation material

3) Make a nest in insulation for the pot (min. 4" for bottom and sides for box, 1-2" Ice Chest)

To Cook

1) Assemble food in pot. Food should fill pot ½ - ¾ full. Cover and bring to a rolling boil; simmer on medium 3 minutes.

2) Place piping hot, covered pot into insulated nest and top with a cushion or pillow. Cover entire container tightly with lid or piece of wood.

3) Food will take 4 times as long to cook. Needs to be finished in 4-6 hours. If food needs to cook longer, remove from box, reheat, and replace (if usually cooks in 15 min. - takes 1 hour)

4) After cooking remove pot. Leave lid off so moisture evaporates before storing.

Solar Cooking

All Solar Cooking works on the same 5 principles. Represented by C.A.R.E.S.

- 1) **Collect the light**: Use reflectors with an approximately 20" x 20" opening
Reflective surface materials include: aluminum, mylar, aluminum or chromium paint
- 2) **Absorb the light**: Paint the pot matte black or another dark color. Pots can be elevated by a wire base or posts, allowing the bottom of pots to collect sunlight
- 3) **Retain the heat**: Oven bags work best.
- 4) **Ease and Efficiency**: Funnel and box cookers easiest to use. Cook foods fairly fast.
- 5) **Safety**: Avoid highly focused light (parabolic) it can damage eyes and start fires. Sunglasses are useful. Cooking pots are hot and should be handled carefully.

Types of Solar Ovens

Box Cooker- Most popular to build and use. Lid of a box reflects light onto food under glass. It can cook and bake large quantities of food. Up to \$200-\$300.

Panel Cooker- Sunlight is reflected off of multiple panels onto a pot under a glass lid or in a bag. Can be built quickly and at a low cost. Many different varieties. About \$20

Parabolic Cooker- Highly focused light and high temperatures. Cooks nearly as fast as a conventional oven. Costly and complicated to make and use. Potentially hazardous.

Solar Funnel Cooker- Cheap and easy. A funnel concentrates sunlight onto a dark pot in a plastic bag. Anyone can make one. \$5

Guidelines for Solar Cooking

- Most recipes take slightly less liquid when cooked in a solar oven
- Cooking times depends on the temperature of the food when it is placed in oven as well as the brightness of the day. Best times when sun is most direct. (between 11-1pm)
- Allow plenty of time. Foods hold well in solar ovens without scorching or drying out.
- Check food about every 60 minutes until you get the feel of it.
- Most recipes calling for a higher temperature will do fine if you cook longer.
- If wind, weight down box/bucket or bury in ground

HINT: Get the food on early and don't worry about overcooking!

You can sanitize water with a solar cooker.

Cooking Times....Approximate

Vegetables: 1.5 hours: No need to add water if fresh. Cut into thin slices or small cubes for uniform and quicker cooking.

Grains: 1.5-2 hrs: Mix 2 parts water to every 1 part grain. Amount may vary according to taste. Let soak for a few hours for faster cooking. To ensure uniform cooking shake every 50 minutes.

Pasta and Dry Soup (65-85 minutes): First heat water to near boiling (50-70 min) Then add pasta or soup mix. Stir and shake and cook 15 additional minutes.

Beans: 2-3 hours: Soak beans overnight, drain, rinse. Place in jar with water.

Meats: 1-3 hours: No need to add water. Longer cooking makes the meat more tender.

Chicken(cut-up)1.5 hrs, beef (cut-up)1.5 hr. fish:1-1.5 hours.

Baking: Bread(1-1.5 hrs), Biscuits (1-1.5 hr), cookies (1 hr)

Solar Funnel Cooker

Dr. Steven Johns at BYU

www.solarcooking.org

Materials

- ◆ Car windshield reflector
- ◆ Joining material: metal brad or Velcro
- ◆ Jar (painted with ultra flat black paint) or thin black pot with tight fitting lid
- ◆ Block of wood, wire mesh cage
- ◆ Plastic Cooking bag (oven proof)
- ◆ Bucket or box (weighted with rocks, brick etc.)

The Funnel

Step 1

- ◆ Bend into a funnel shape circle, over lap about 1 ½ inches

Step 2

- ◆ Join the 2 sides together using fasteners or Velcro every 6 inches
- ◆ Place funnel in bucket or box to stabilize
- ◆ For greater stability, dig a hole and place funnel cooker inside

Cooking

- Paint a cooking jar black (putting strip of masking tape down the side for viewing) (use ultra flat black paint for glass or metal) or use thin black pan with tight lid.
- Fill cooking vessel with food
- Place a wooden block or a wire platform, glass plate, etc. in bottom of the cooking bag
- Place the jar on top of platform, blow air into bag, secure at (or top put bag over top)
- Place the bag and contents inside the funnel cooker

Point funnel towards sun. Cook 1 - 4 hours

Alternatives

- ◆ Use 2' x 4' piece of cardboard with foil glued to it instead of car reflector
- ◆ Dig a hole, line it with aluminum foil and place the pot and bag in the center
- ◆ For a more permanent cooker, line hole with cement and paint with reflective paint
- ◆ Remember to make the opening 400 square inches or 23 inch diameter

BE CREATIVE

Solar Facts

Problem: Half the people in the world must burn wood or dried dung to cook their food. Nearly 1.2 billion people, 1/5th of world population does not have access to clean drinking water. Over 1 million children die yearly because of unboiled water. Wood cut for cooking purposes contributes to the 16 million hectares of forest destroyed annually.

Impact: Expect solar ovens to replace 60% of cooking fuel in most places.

Applebox Reflector Oven

(Emergency Food in a Nutshell)

To See Applebox in Action go to: yourfamilyark.org

An inexpensive way to bake in an emergency. It uses about half the charcoal that a Dutch oven uses and gives the same results as baking in at regular oven. It bakes bread (two loaves at a time), rolls, muffins, casseroles, cookies and cakes, anything you would bake in an oven.

Baking once a day for 1 hour, at 350°, will use 15 charcoals/day. (1 charcoal ~ 35° to 45°)

Kingsford brand best=17 per pound

One year= 20 (16-pound bags) Keep dry. Don't forget to store newspaper and matches.

Supplies:

Sturdy Applebox (20"x13"x12 ½")

1-78" length heavy duty foil

Optional: for a window

1- plastic oven bag

box cutter

Metal Repair Tape* (foil tape/ paint dept/hardware)

1-84" length heavy duty foil

double-sided clear tape

*Masking tape may be substituted in sticking the foil to the box. It must always be hidden inside the foil to keep it from igniting. Duct tape may be substituted in making the window. Over time it will need to be replaced.

Pre-Preparation:

1) If there are any holes, including handle holes, in your box, cut extra cardboard to fill holes snugly and cover patch with foil tape on both sides.

2) If an oven window is desired, cut a horizontal oven window (app. 9"x4") in one of the long sides, centered and 2 ½ inches from the closed bottom of the box.

Covering the box:

This box will be entirely covered inside and out with foil and secured with tape curls. Any exposed box inside will burn, therefore overlap foil.

1) The 78" length of foil will cover the inside and outside ends of the box and the outside only of the bottom.

- Lay foil shiny-side down. Position the box lengthwise and bottom down, centered on foil.
- Fold one length of the foil up the end and inside the box. This end of the foil should fold onto the inside bottom about 4 inches. Smooth foil out and ease into corners, allowing the extra to go onto the sides.
- Making sure the foil on the end just covered is snug, repeat the same procedure for the other end of the box.
- Secure foil about every 4" with hidden tape curls or use foil tape – inside and out. Fold excess foil on the outside edges of the box onto the box sides secure with hidden tape.
- **(DO NOT put tape within 1" of window opening)**
- Secure foil every 4" or so with hidden tape curls, inside and outside the box.

Making the window:

- Feel carefully for the window location.
- Using scissors or box cutter, cut a horizontal slit in the middle of the window hole, stopping 2" from each side. At each end, make diagonal cuts to the corners.
- You now have double flaps of foil on all sides of the window..
- Fold the outside flaps through the window to the inside of the box and secure with small hidden tape curls.
- Cut extra bits of foil and fold over window corners so that no part of the box is exposed. These will need to be pinched into place and secured with hidden tape curls.
- Using a plastic oven bag, cut a double layer rectangle ½" larger than the window on all sides. To prolong the life of the window, secure bag over the outside of the window opening with double-stick

tape placed slightly to the outside of the window edges to hide it from the heat. Repeat with the second layer of plastic bag.

- Secure outside plastic bag edges with foil tape.

Baking with an Applebox Reflector Oven

Supplies needed:

4 empty soda pop cans, ½ filled w/rocks	10 x 16 “cookie cooling rack
Chimney charcoal starter*	Heavy duty foil – 36” (ground cover)
Charcoal briquettes	long-handled tongs
Newspaper	matches
1” high rock	

Baking Steps

1. Place a piece of foil, shiny side up, on level ground or cement (not anything flammable)
2. Space pop cans on foil so as to support the cookie cooling rack.
3. Position cooling rack so that only the very corners are resting on the pop cans. Check to make sure the cans are not spaced too far apart to prevent the applebox from fitting over them. Set rack aside.
4. You will regulate the temperature of your oven by the number of briquettes you put in it. **One briquette = approx. 35 degrees F. (350 deg. = 10 briquettes)**. Count out desired number of charcoals into the charcoal chimney. (In very cold, wet or cold windy weather an additional charcoal or two may be needed.) Place chimney on a piece of foil on ground. Place a wadded up piece of newspaper in the base of chimney and light. Repeat with second piece of newspaper if necessary. Allow to stand 5-10 minutes until **all** charcoal has white spots at least the size of a dime.
5. Using tongs, place hot briquettes on foil, spreading them out evenly between the cans and across the middle. Place cooling rack on top of the cans.
6. To pre-heat oven, place the applebox over coals and rack, resting one corner on a charcoal 1” rock. (this allows enough air in the box for the charcoal to stay lit)/ Let stand for 5 min. Charcoal will become whiter as heat spreads.
7. Carefully lift applebox off coals taking care not to tilt and place beside the ground foil. This holds trapped heat in the box.
8. Quickly place tray of food to bake on cooling rack and replace box over coals, resting one corner on the rock. (Food cooked on cookie sheet should be place in from the corners as food directly over the cans will not cook)
9. Charcoal will burn for 35-40 minutes. When longer cooking times are required, additional hot charcoals can be added by slightly lifting the box and slipping them in with long tongs. *When adding additional coals, only add ½ the original number.* A little additional cooking time may be necessary to compensate for the heat loss when adding new charcoal.
10. When food is done, remove the applebox and serve.
11. Safely dispose of charcoal. Foil can be reused.

Note: Use light colored cooking/baking pans so that baked foods do not get too dark on the bottom.

Hint: When setting up oven, face the window toward the sun. This allows you to check the foods visually to see if they are done.

Hint: When baking in freezing temperatures, place a doubled piece of wool blanket or other material that insulated on top of the box to retain the inside heat.

* Charcoal rests a third of the way up the starter on a rack, which gives space for wadded up newspaper underneath. The newspaper is then lit to ignite the charcoal. Always place the starter on a piece of heavy duty foil to prevent permanent blackening of your lovely concrete or patio-which we can attest does happen.

Dutch Oven Cooking

(experts advise using Kingsford Briquettes only)

Ovens (DO) should have a tight fitting lid with a lip around the top to contain coals. It should have legs to make stacking available without cutting of the air supply. It should have a ring in the middle of the lid to be able to use a hook, tongs or pliers to remove the lid. When using more than one DO stack them several ovens high to conserve coals.

Hint: You can reuse partially burned charcoal briquettes by dowsing with water and completely drying before reusing.

Seasoning: Before using the first time you will need to season your oven.

Wash with milk, soapy water and stiff brush to get off the residue. (may have to warm in oven first then wash) Dry well. Line bottom of oven with aluminum foil. Preheat to 350°

Method 1 (Both methods will smoke up house-turn on fans, open windows)

Grease everything (pan and lid) inside and out with thin coating of Crisco or vegetable oil.

Bake both the oven and lid upside down in your oven for 1 hour. Then turn of heat let the oven cool in the oven. Remove and wipe out excess oil

Method 2

Put DO and lid on rack in oven for 5 minutes. Remove and wipe a thin coat of Crisco on all surfaces

Replace DO and lid upside-down in oven and bake for 30 minutes, remove. Wipe again with shortening and return to oven. Repeat 2 more times (4 times total). At last baking, turn the oven off and allow to cool all night.

Cooking

The first few times of cooking in DO cook greasy foods. (avoid watery or tomato based foods)

After the coals have white spots on them spread out on lid and on group underneath oven.

(be sure to cook in dirt or if on cement lay foil down first). The trick to using your DO is the get the heat just right for the job you want to do. You regulate the heat by adding coals or taking some away. A general rule is you use : Diameter of lid +0 coals on top , Diameter – 2 coals on bottom. (example: 12” Dutch oven = 10-12 coals on top / 8-10 on bottom). But this depends on what you are cooking. Most DO recipes will tell you this information. The tendency usually is to get the oven too hot, especially on the bottom. Remember, most cooking in a Dutch oven is from heat gained from the coals on the lid. You can look every so often to check on the progress, just remember you will lose precious heat every time you take off the lid.

Hint: To check temperature of charcoal after it is lit use the following guidelines:

Hold hand a few inches above the coals.

If you can hold it there 4-5 seconds 300°

If you can hold it there 3-4 seconds 350°

If less than 3 seconds 400+ degrees

OR

Put a teaspoon of flour on pan or plate that will fit in the oven. The color of the flour after baking with the lid on will give you a pretty good idea of the temperature.

Light tan (in 5 minutes): @250°, Medium tan (in 5 minutes): @ 350°,

Dark Brown: (in 5 minutes) @ 450°, Dark Brown (in 3 minutes): about 550°.

Cleaning

After cooking, scrape, wipe out and wash with water but NO soap. (if you use soap or scrap to hard you will need to re-season). Re-wipe with vegetable shortening or oil before storing. (no need to re-bake unless you wrecked the seasoning).

Storing

Store in a dry, warm place with the lid ajar for air to circulate. Good idea to put piece of wadded-up newspaper in absorb any moisture.

Rocket Stove

For video of step-by-step go to rocketstoves.org

5- gallon tin can (square)

4" 90° Elbow

Leather Gloves

Knife-serrated

Empty, clean, Can (fruit/chili/etc)

File

4" Stovepipe (1' long-one edge crimped)

Good, sharp Tin Snips

Pencil

Chisel

Hammer

Ashes (sand/dirt/for insulation, NON-flammable)

- 1) Use elbow, non-crimped end as a template to and draw a circle, centered, 1" from bottom edge of can. Use hammer/chisel to start hole on edge. Wearing gloves, use tin snips to cut out hole, staying on inside of line. File cuts so there is no sharp edges.
- 2) Measure 4" from crimped end of pipe make mark all around. Use tin snips to cut. File edge.
- 3) Measure 5" from uncut end of pipe, make mark all around. Use tin snips to cut. File edge.
- 4) Fit 4" piece into cut hole in can, crimped end inside can, trim/file if necessary to fit, should extend about 1 1/2" outside of can.
- 5) Use 5" piece as template for hole in lid. Use hammer/chisel to start hole. Cut w/tin snips. File
- 6) Fit 5" pipe piece onto elbow tightly. Attach elbow to bottom piece of pipe, tightly.
- 7) Cut edges off of lid so it will fit into can.
- 8) Fill can with ashes, until filled within 1" of top of 5" stovepipe. (acts as insulator)
- 9) Slip lid over 5" stovepipe and push down onto ashes,
- 10) Cut of top/bottom of can, Cut open along side, flatten. Mark 4" from center of bottom.
- 11) Mark 2 lines up from marks, stopping 1" from top. Cut along these lines. (looks like shirt)
- 12) Insert into cut area into 4" pipe, level w/bottom. This is fuel shelf: paper below, sticks above.

To Use Rocket Stove

(for outdoor use only)

- 1) Crumple up 2 pieces of paper, push to back with hand or stick
- 2) Slide 4-5 sticks onto top of fuel shelf, push to back.
- 3) Put grate or cookie rack on top of can, to set pot on.
- 4) Light paper with match, wait a minute. If really smoky, blow some air into fuel shelf until flame burns bright out of top.
- 5) Wait a few minutes until flame goes down. Put pot on top.
- 6) For hotter stove add more sticks for cooler add less, just push sticks in as needed.

Hint: This will make you pans very black on outside of pan.

Variation: Can use anything that burns; charcoal, sticks, small pieces of wood,