

Cardboard Box Oven

Submitted on January 3, 1992 by: Chip Reinhardt, Scoutmaster, Troop 451, Durham, North Carolina

Modified by Bob Coughlin.

In response to a couple of requests, this is a description of how to construct a cardboard box oven. We have been using these in our Scout troop for about 5-6 years now, and they are always a big hit with the boys. With a cardboard box oven, you can pretty much bake in the outdoors anything you could bake at home in a conventional oven. The first known reference I have to this oven is a copy of an article I saw from a 1953 issue of Boys Life. I first saw it used by another troop here in Durham, but no Scouter is EVER above borrowing a great idea!

Materials needed:

- A cardboard box about the size of the boxes that reams of copy paper come in (you can go to a Staples or Office Depot and ask them when they will be restocking their paper supplies and they will give you these boxes – if you want to make a 2 rack oven, get an 11x17 paper box)
- A pint of contact cement
- 1/8 inch bar stock – can be found at Lowes or Home Depot (Crown Bolt 1/8 In. x 48 In. Round Rod, Plain Steel)



- A roll of heavy duty Reynolds aluminum foil (wider is better than narrow and do not go with a less heavy type)
- 2 pie tins, a 1/2 inch bolt with matching nut
- Sharp Knife to cut cardboard if necessary and scissors to cut aluminum foil
- Foil Tape



How to build:

1. Fasten aluminum foil to the entire INSIDE of the box and the cover. Do not leave ANY cardboard exposed on the inside of the box. I use contact cement to fasten the foil to the inside of the box. IF YOU USE CONTACT CEMENT, BE SURE THAT YOU ALLOW 3-4 DAYS FOR CURING BEFORE USING THE OVEN!!! If any of the aluminum foil tears while applying, just cut patches and glue over the tear. You will get better results if you use two layers of foil and there will be less chance of the oven spontaneously combusting. Make sure you wrap the foil over the top of the box and down about 2 inches. Use the foil tape at this point to cover the seams where the aluminum foil meets as well as on the outside of the box and lid to give the oven a finished look and reinforce your corners.
2. Now you will make the rack using metal rods. For a box with a single rack, the shelf should be 2/3 up from the bottom. For a box with 2 racks, the bottom shelf would be at about the midway point and top shelf at the 3/4 point. Cut the rods so that they are about 2-3 inches longer than the width of the box. You will want to file down the edges that you cut as these bars leave jagged edges. Once you have cut the rods, punch them through from one side of the box to the other side of the box. You can tape a piece duct tape around the ends of the rods after they are in place so they don't move around or cut someone. BE SURE THAT ALL RODS ARE LEVEL WITH THE BOTTOM OF THE BOX. I usually cut a small measuring stick to my desired height from the bottom of the box to the rack level, and then make sure that I measure the entry AND exit point of EACH rod to see that it is level from the bottom. Two rods for each rack should be sufficient and place them about 1 1/2 inches from the front and back of the box.
3. Your oven is almost finished! You now need to create the heat source. This is done by using the 2 pie tins and the nut and bolt. Put the 2 pie tins bottom to bottom and punch a small hole the width of the bolt through the center of the 2 pie tins, then put the bolt through one tin and attach the nut on the other side. Place the pie tins in the bottom of the box. This will keep the charcoal off the bottom of the box and closer to the cooking shelf.
4. You are ready to BAKE!

USING THE OVEN

When you get ready to use the oven, you start a sufficient number of charcoal briquettes (see info below on how many to use) OUTSIDE the oven in either a charcoal chimney, on a grill or whatever you decide to use. A good high-quality briquette like Kingsford works best, but if you use off-brands, be sure to add 3-4 more briquettes than would normally be called for. DO NOT use coals from campfire wood. They smoke too much and will not go the distance for you. Once the briquettes have all turned to WHITE (and NOT BEFORE!), take a pair of channel locks, or other pickup tool or fireproof glove, and insert the pie tin of white coals into the bottom of the oven, making sure that it sits in the middle of the oven.

Since the box is a miniature oven, it is important that you keep it LEVEL while cooking. Position the box on the ground or on a table in such a way that it will remain level, and out of the way of normal Scout horseplay!

From here on out you just follow the directions on the goody you are baking. Mix up the batter, put into a greased pan, and insert into your oven on the rack. Then put on the cover, check your watch and bake for the time required by your recipe. NOTE: I have found in some recipes that some cracks are needed in the oven to allow the escape of moisture. You may want to leave the lid slightly ajar, or you may want to get fancy and cut a small "vent" door in the top of the oven that you can open and close when necessary. You can also wedge a small stone between the cover and the box which will create a vent. Also, if you put more coals in than the formula calls for, you may need to check the oven a little sooner to avoid burning.

There is nothing better than hot biscuits, muffins or cornbread for breakfast, and brownies, fudge, or cake for dessert at dinnertime.

Bon appetit!

I found this reference on the internet and have generally used it as my approach when dealing with briquettes.

Regulating Oven Cooking Temperature

Regulating cooking temperature is by far the hardest thing to master when learning to cook in a Dutch oven. Hopefully the few tips I have to offer will help you out.

First and foremost, always use high quality briquettes. I recommend using Kingsford charcoal. Kingsford is packed tighter than most other brands so it won't pop and spit, and it tends to burn longer than other brands. Avoid using "Match Light" charcoal as it burns hot so it doesn't last as long. Kingsford charcoal will generate good heat for about an hour's time. For recipes that take more than an hour to cook, after an hour remove the remaining briquettes and ash from the oven and replenish them with new briquettes. Note: because the Dutch oven is already hot, you will not need as many briquettes as when you started cooking. I usually remove 2-3 briquettes from the top and bottom the first time I replenish them.

The general rule of thumb to produce about a 350°F heat is to take the size of the Dutch oven in inches, double the number, and use that many total briquettes. So, for a 12" oven you would use 24 briquettes, for a 14" oven you would use 28 briquettes, etc.. Remember this is just a rule of thumb and does not work for all makes of ovens! This rule for instance does not work when cooking with MACA deep Dutch ovens because they are much deeper and they are manufactured with more metal. This will be better explained below.

Lodge Cast Iron Mfg. has recently put out a baking temperature chart for use with their ovens listing the total number of briquettes necessary to bring an oven to different temperatures. You can download a copy of the document [here](#).

Generally speaking each briquette will produce about 10° - 15° F. worth of heat on a moderately warm day with no wind. However, do not use these numbers to try and formulate how many briquettes you should use to generate internal oven temperatures. Instead, use the general rule of thumb to calculate the number of briquettes to reach 350°F. and then add or subtract briquettes to reach the temperature you desire. Why shouldn't you use the heat values to determine temperature? The answer is, other factors such as the amount of metal used to manufacture the oven, the size of the oven (volume), and the amount of free airspace inside the oven affect the final internal temperature the oven will reach when using a set number of briquettes. The more metal, volume of food, and internal air space you have to heat up, the more heat will be required to bring your oven to the desired temperature. **(When cooking with the box oven, figure about 25° - 30° F per briquette – experiment and buy a thermometer).**

Other factors such as ambient air temperature, humidity, altitude, and wind all influence how much heat is generated by burning briquettes. Cool air temperatures, high altitudes, shade, and high humidity will decrease the amount of heat generated by briquettes. Hot air temperatures, low altitude, direct sunlight, and wind will increase the amount of heat generated by briquettes. Also note that in windy conditions briquettes will burn faster due to the increased air flow around them, so they will not last as long.

Heat placement around the Dutch oven is crucial to yield the best cooking results. Briquettes placed under the oven should be arranged in a circular pattern no less than 1/2" from the outside edge of the oven. Briquettes placed on the lid should be spread out in a checkerboard pattern. Try to avoid bunching the briquettes as this causes hot spots.

The number one question I am asked is "How many briquettes should I put on the lid and how many should go underneath the oven?". The answer is "It depends on what you are cooking".

- For food you wish to simmer such as soups, stews, and chili's; place 1/3 of the total briquettes on the lid and 2/3 under the oven.
- For food you wish to bake such as breads and rolls, biscuits, cakes, pies and cobblers (rising); place 2/3 of the total briquettes on the lid and 1/3 underneath the oven.
- For food you wish to roast such as meats, poultry, casseroles, quiche, vegetables, and cobblers (non-rising); use an even distribution of briquettes on the lid and underneath the oven.

The golden rule of Dutch oven cooking is "go easy with the heat". If the oven isn't hot enough you can always add more briquettes, but once food is burned, it's burned.