When stacking wood outside, put several large sticks on the ground. Place the firewood on top of these sticks. The large sticks help to keep firewood away from ground dampness. The woodpile will need three sizes of wood:

**Tinder** is pencil thickness or smaller. It may be small twigs, pine needles, bark, or shavings. The tinder needs to be small enough and dry enough to light easily. Store tinder by covering to protect it from rain.

**Kindling** is medium size wood between pencil thickness and wrist thickness. It will catch fire from the tinder and keep the fire going until larger fuel ignites.

**Fuel** is wrist size or larger. The hot coals from these large pieces furnish heat for cooking.

**COOKING FIRE**

The cooking fire must generate a lot of heat in a short amount of time, be able to be constantly replenished and produce low manageable flames. The A-frame fire is the most popular type of fire for cooking.

**Step 1**—Arrange large rocks or mounds of earth opposite each about 1-1/2 feet apart. Lay a cooking rack on top of these and adjust rocks or earth so that the rack is very stable.

**Step 2**—Lay two 2-3 inch diameter sticks so that they make a triangle. Their point should be facing in the opposite direction from where you plan to cook. On top place a small stick crosswise to the 2 sticks to form an A.

**Step 3**—Place a loose mound of tinder material in the middle of the A (tightly twisted newspaper may also serve as kindling). Fill the entire center of the A-frame. Now lay several sticks of kindling across the A-frame you have made. The fire is ready to be lit.

**Step 4**—Strike match and light fire by igniting tinder underneath the cross of the A-frame. As fire starts, add more kindling and finally heavier fuel logs. When fuel logs catch fire and flames have subsided, you are ready to cook. If everything goes well, it takes about 20 minutes to get a fire ready for cooking.

**SAFETY POINTERS**

- Is the fire far enough away from trees, bushes, and dry grass?
- Is the fire area protected by rocks?
- Is equipment on hand to put out fires? A bucket of water and a shovel for sand or dirt are both useful. When finished with the fire, spread out the coals and pour on water. Do not leave the area until the coals are cool enough to touch.
- Is the fire built in the open air and not in closed porches or garages where smoke and fumes can be harmful?
- Is there a first aid kit?

**GRILL**

A grill over the campfire provides a way to cook with pots and pans. Improvise by using a wire shelf from an old oven (do not use grills from old refrigerators) or use heavy close-meshed wire fencing propped on rocks, bricks or concrete blocks. The fire can be a campfire, or in a wheelbarrow, an iron kettle, or a cut off oil drum. Make sure the grill is even and well anchored to prevent spills and accidents.
CHARCOAL FIRES

Chimney starter method: Use a can about the size of a three-pound coffee tin. Remove both ends of the can. Punch holes around the bottom of the can with a can-opener or a large nail. Put crumbled paper or a section of egg carton starter in the bottom of the can. Stack the charcoal on top of the paper. Ignite the paper to start the fire. Let this burn about 40 minutes. Lift the can and spread the charcoal for cooking (You may need to prop one side of the can for plenty of oxygen).

Save the briquets to use again. Extinguish them by putting them in a covered can or use water. Reusing briquets saves money and makes sure the cooking fire is out. Briquets can be reused until they have completely burned.

**Egg Carton Starters** can also be used to start a fire. Fill an egg carton with wax from old candles or paraffin and with kindling such as twigs. Some people put wicks in them. Break off sections to start the fire. The carton and the twigs help the wax to burn. Do not use fuel oil, kerosene or gasoline. They produce smoke, are dangerous and leave an oily after-taste on food.

HOMEMADE STOVE

Small homemade stoves are good for 1 or 2 people, one dish meals, or wet weather emergencies.

A small stove can be made with a #10 tin can or a three-pound (1.3 kg.) coffee can with one end open. The open end becomes the bottom of the stove. Cut a three-inch (7.5 cm.) doorway in the bottom edge and a hole for the chimney near the top on the opposite side. You now have a “hobo stove” on which you may fry or scramble eggs, make toast or pancakes, prepare one-dish meals, or boil coffee. Fuel can be either dried twigs or a Buddy Burner.

To make a Buddy Burner, use a flat can such as a tuna fish or sliced pineapple can. Cut corrugated paper about one-fourth inch wider than the depth of can. Start in the center of the can and wind corrugated paper into the can as snugly as possible. Pour melted paraffin or candle wax into the corrugated paper until the can is filled. To use, light with a match or small piece of wood. Set into the tin can stove. To extinguish, invert a slightly larger can over the burner.

COOKING WITH FIRES

PROTEIN COOKERY

Meats are a protein food. High heats can easily toughen protein. It is best to cook meats by using a moderate heat. There is also less danger of overcooking when a moderate temperature is used.

Time tables for cooking meat (roasts, steaks or hamburgers) are found in many recipe books. Cooking time over a fire should be about the same as cooking in an oven or on top of a stove if the fire is the right temperature.

Don’t put raw or cooked food on dirty surfaces. Use clean containers for the meat during transport and when removing from the fire.

CHECKING THE HEAT

Control the heat by the size of the bed of coals or how far the food is placed from the heat. Fast cooking at a high temperature is more likely to cause a greater loss of juices and fat from meat. Slower cooking will cause less loss of drippings and ensure more even cooking.

Some people use the hand test at the level the food will be cooking. Count 1000-1, 1000-2, 1000-3, etc. If you can leave your hand there for a 4 second count the heat is very low. A two second count is a moderate temperature of about 325°F. (163°C.) Be prepared to raise or lower the food over the fire if the food is cooking too slowly or too fast.

CONTROLLING FLAMES

Meats also have a fairly high fat content. Controlling the heat to prevent excess loss of fat and juices is important in cooking meat. A moderate temperature prevents excess loss.

Fat burns. As fat drips from cooking food, flames will appear. Hot coals, not flames, should be used for cooking protein. To prevent fat dripping into the fire:

- Trim excess fat from meat, and use lean ground hamburger instead of hamburger with a higher fat content. Be careful with marinades that contain fat such as margarine, butter, or vegetable oil.
- A sprinkler, glass bottle with holes in the lid, squirt bottle or water gun can be used to squirt flames with water. A lot of flames means a lot of water which may put the fire out or reduce the heat of the coals.
- When cooking meats and poultry, use tongs or spatulas or asbestos gloves. Long handled tongs and spatulas are available in cookout supplies. The prongs of a fork pierce the meat fibers which releases valuable juices and flavor and adds “fuel” to the fire.
FOIL-DRUG STORE WRAP

Aluminum foil is popular for cooking over a fire. Foil can be used for individual meals or for main dishes or vegetables that are part of the meal. The foil packet can be placed near coals or cooked on a grate.

Use one layer of heavy duty or two layers of lighter weight. Use drug store wrap. Turn frequently to prevent burning.

1. Use enough paper so the edges may be folded down at least three times.
2. Place the food in the center of the paper.
3. Bring two edges of paper together above the food and fold down in \( \frac{1}{2} \) inch to \( \frac{1}{4} \) inch folds until the paper is tight against the meat.
4. Press the wrap closely to the food to force out the air.
5. Fold over ends at least twice.

COOKING UTENSILS FOR OPEN FIRES

Cooking utensils used on open fires will become quite black on the outside, some of which will be difficult to remove. Therefore, use a special set of pots and pans. Old ones can be purchased at a store selling second-hand items. Avoid spending vacations scouring pots and pans by soaping their outsides before using them. Use a bar of soap and water to make a heavy lather. Thoroughly coat the outside of the pan. Be careful to avoid the lip and inside of the pan or you will have soapy food. The pans so treated will blacken alarmingly but all the blackness will wash off easily in cold, running water with a wipe of a sponge.

Use heavy skillets and pots with firmly fixed wire holders or long handles. Pot bottoms should be flat and stable for placement on a fire rack. The chart shows how cook out equipment can be adapted.

BAKING WITHOUT AN OVEN

Equipment used for baking at home can be used for baking with fires. Adaptations can be made so the heat will circulate around the baking product. The food will not be as brown, but should be similar in texture and size. Reflector ovens are inexpensive and easy to use for baking meats or breads but are not necessary.

A rack can be used to hold a baking dish. Cake or pie pans, muffin pans, and custard cups can be used for baking cakes, pies, cookies, biscuits, breads, apples, potatoes, muffins, custards, rolls, cornbread or cupcakes.

Many of the good sanitation practices used in home kitchens are forgotten or are considered to be too much trouble when camping.

Clean-up can be accomplished in a sanitary manner with a minimum of trouble. Fill unused pots with water for dish washing and place them on the fire at the end of food preparation. While you are eating, the water will be heating. When it's time to wash dishes, fill a pan half full of hot water and add cold water to a comfortable temperature. For rinsing add a teaspoon of chlorine bleach to about a gallon of water as a bactericide. A rack for drying saves time and dish towels. Dish towels often do not dry between meals because rain is hard to avoid in Virginia. A drying rack could be contrived from materials found at the campsite.

Soaped, blackened pans can be washed last. Don't let pots and pans sit dirty or soaking because they attract small animals and insects. Scouring pads are a must on the equipment list.

CLEANING THE GRILL

Use a wire brush to scrape loose particles that stick to the grill. Soak the grill in hot soapy water and use steel wool if necessary. Some people like to clean the grill in a self cleaning oven.

TRASH

Safety and sanitation depend on a clean cooking area. Just as spoiled food can make picnickers sick, it can also make animals sick that roam the cooking grounds. Always plan ways to remove trash at the end of the cookout.

- Much of the trash such as paper goods can easily be burned. Wet foods do not burn well. Garbage such as peels, cores, and rinds may be wrapped in old paper first, then placed in the fire to facilitate burning.

- Many picnic grounds have closed containers for trash. Be prepared to have alternate ways of trash disposal. Animals can easily get into open containers. Since many animals also can get into closed containers, weighted lids on picnic trash cans might be necessary.

- Any trash that cannot be disposed of or does not burn easily should be collected and disposed of at home. Cans can be flattened to take up less space.
Plan the entire camping menu and the equipment list. Plan one extra meal. Take advantage of berry picking, if the occasion arises. Use the equipment list to help plan equipment needs. Here are some suggestions that might help menu planning.

1. Start with a food plan that is safe and nutritious. See Nutritious Carried Meals (Pub. 348-015) for helpful suggestions.
2. If you bring fresh or frozen meat from home, plan to use it at the beginning of the camping trip. Always carry fresh or frozen meat in the cooler.
3. Plan succeeding meals around foods that come in cans and do not need refrigeration. Such foods are tuna, dried beef, salmon, chicken, or beans. Smoked meats such as summer sausage can also be used.
4. Plan cooked meals for times when the campers have time to help prepare and clean up. Plan picnic meals when less time is available and campers want to sightsee or swim. Breakfasts can be complicated or quick. Cold cereal, milk, fruit, and heated tea, coffee, or cocoa are quick and tasty camping breakfasts.
5. If campers will drink powdered milk, premeasure the milk powder into plastic bags for each day’s menu. Bring enough to use for one more day than you plan. Purchase a 2 quart plastic bottle with a tight screw-cap lid. Make the day’s milk supply by emptying the powdered milk into the washed container and filling with water from a safe water supply. Shake until mixed. Store in a cooler over night.
6. A ready all purpose biscuit and pancake mix is handy for mixing up pancakes, biscuits, pie crust, dumplings for campers’ stew, or a variety of quick breads.
7. Count on replenishing the ice supply in the cooler every 2 days provided the cooler is kept tightly closed and is opened as little as possible. Loose ice in the cooler should not be used for eating or drinking. Ice packed in sanitary containers may be used.
8. When planning meals, also plan who will help with cooking, who will set the table or get eating utensils ready, and who will help with cleanup. Getting meal ideas from the campers makes meals more exciting, helps avoid disagreements during camping trips, and prevents one camper doing more than his share by default. Such occasions are great times to teach the “assigned” new camper camping skills.
9. Plan some fun foods and surprises that can be used toward the end of the trip. Examples are favorite foods and fancy campfire items that do not spoil such as biscuits on a stick, marshmallow-chocolate-graham crackers (some-mores), and muffins baked in hollowed out orange shells.
10. Choose 3 or 4 favorite spices and place some in plastic bags or small plastic containers with tight lids. Label for use in prepared dishes.
11. If you plan to camp when weather is cool, avoid serving hot food items in metal cups or plates. The utensils will be too hot to handle when hot stews and drinks are served in them.
EQUIPMENT FOR A WEEK’S CAMPING

A small metal tool box with a handle makes a perfect carrying case for kitchen utensils. A shoe box also may be used.

KITCHEN CHECK LIST

Can opener
Carving or paring knife
  - with protective sheath
Spatula
Long-handled fork
Slotted cooking spoon
Wooden spoon
Potato peeler
2 serving spoons
Silverware for number of people camping
  (knife, fork, spoon, plus 2 extra teaspoons)
Plastic dish pan or bucket
Folding dish draining rack
Dish washing detergent
4 dish towels
Small bottle chlorine bleach
Set of camping pots and pans or
  1 family size skillet
  and 2 pots
1 small sauce pan
Matches
Pot holders (2)
Water jug - either thermos or
  collapsible water bottle
Salt and pepper shakers with closable tops
Plastic table cloth
Paper towels
Scouring pads
Sponges or dish cloths
Roll of aluminum foil
1 cutting board
Plastic garbage bags or paper bags
Set of plastic dishes - plates, bowls, cups,
  glasses for each person
2 serving bowls which can serve as mixing bowls
1 serving plate
Tongs
Large tarp with ropes for spreading over the
  food preparation area in case of rain.
Other:

BAKING PANS

COOKIE/BISCUIT DOUGHNUT CUTTER

MIXING BOWL

ROLLING PIN

SIEVE/GRATER

SIFTER

EATING UTENSILS

By planning ahead
EQUIPMENT SUBSTITUTION

for cookouts and improvising equipment, one can save packing space, extra cleaning up, and cost.

- Frozen food pans
- Folded aluminum foil
- Metal cans
- Metal lids
- Fruit shells
- Forked stick

Corn in Husks
Pull back husks and remove silk. Replace husks. Soak corn in husks in water at least an hour or longer. Place in hot coals. Turn frequently.

Tomatoes, peppers, onions, canned potatoes and/or, fruit can be pushed on a stick and cooked.

Wrap biscuit dough around the end of a green stick which is 1 to 2 inches (2.5 to 5 cm) in thickness, covering the end of the stick. Brown until done. Fill center with preserves, cheese or peanut butter.

- Glass or cup or can
- Wire grill
- Knife or spatula to cut squares or diamonds
- Metal cans (if no spoons are around, use a tight lid and shake)
- Plastic bag, fasten top and squeeze
- Metal can
- Cut or chop fine
- 1 c. sifted flour is the same as 1 c. unsifted flour minus 2 Tbsp.

Other:
- Tooth sides
- Drinking glass
- Metal lid or tin can punched with holes
- Clean, fine-mesh wire
- Non-sift flour
- Paper or plastic dishes
- Cans
- Pie plates