
FIRE CRAFT



- ✓ Wood Fires
- ✓ Buddy Burners/Tin Can Stoves
- ✓ Charcoal Fires
- ✓ Camp Stoves

“Therefore, since we are receiving a kingdom that cannot be shaken, let us hold on to grace. By it, we may serve God acceptably, with reverence and awe; for our God is a consuming fire.” (Hebrews 12:28-29)

Wood Fires

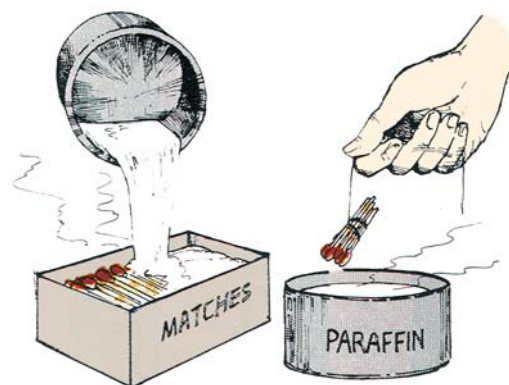
An open campfire can be good and useful. You can use a campfire for warmth, light, cooking, drying, and fellowship. However, we need to be aware that the use of fires affect both conservation and environmental practices. Fires cause the scarring and blackening of the ground, rocks, and vegetation. Fires destroy dead branches and other vegetation that may be



used for shelter and nutrition for animals and plants. With the use of fires, there is always the danger of the fire spreading and destroying much of the surrounding landscape. Use only the ground space and natural materials necessary to make the fire that is needed. A small fire is best.

Care of Matches

- Use only large, wooden matches that will strike anywhere.
- Take care to keep matches dry and safe.
- Always handle matches in a safe manner and be sure a match is completely out before discarding.
- Waterproof a whole box of matches by pouring melted paraffin wax over them. A small match bundle can be waterproofed by dipping them into melted paraffin. Individual matches can be dipped into melted paraffin and then stuck into corrugated cardboard for storage. Melt paraffin in a “double boiler” type of pot (small can of paraffin sitting in a heated pot of water).
- Waterproof matches and waterproof match containers may be purchased at camping stores or be homemade.



Fire Safety

Know these camp fire safety rules.

- Never play with matches.
- Never play around camp fire areas.
- Always use caution around any camp fire. Smoke and sparks from fires can cause irritation and burns.
- Know what to do in case your clothes catch fire. If your clothes catch fire immediately do the following:
 1. **Stop.**
 2. **Drop** to the ground and cover your face.
 3. **Roll** on the ground to put out the fire or smother with a blanket.
- Always supervise a camp fire.



*“And lets us be concerned about one another in order to promote love and good works, not staying away from meetings, as some habitually do, but encourage each other, and all the more as you see the day drawing near.”
(Hebrews 10:24-25)*

A bed of coals is used for cooking and providing warmth for campers. During a campout, safely remove one coal from the bed and set it near the campfire. After a few minutes the coal will begin changing from a bright red coal to a dim ember. When the ember is returned to the bed of coals, it will soon begin glowing again. When we remove ourselves from the body of Christ (the church), we gradually become cold. When we remain in fellowship with others, we help reflect God’s love and warmth.

Preparing a Fire Site

- Select an open area clear of overhanging branches and away from foot traffic.
- Clear a circle of burnable material large enough to keep the fire from spreading.
- If permissible and desirable, dig up a shallow amount of soil. Build the fire within the shallow hole. Save the soil for replacement after using the fire site.
- Secure an adequate wood pile for your needs before you start.
- Collect materials for preventing the fire from spreading - such as soil, a bucket of water, wet burlap bag or fire extinguisher.



Leave No Trace Fire Site

With the increasing awareness of environmental and conservation issues, many wilderness areas recommend and some require the use of “leave no trace” campfire sites. Keep fires small and use only enough wood to accomplish your purpose. Two such methods are as follows:

- **Mound Fire.** Bring a piece of plastic (a tarp, heavy plastic sheet or trash bag) and a small amount of sand or clay soil. Lay the plastic on the ground and make a pile or mound of the soil on the plastic. Build the fire on the top of the mound. After use, burn all wood to ashes, extinguish and broadcast the ashes over a wide area. Repack the sand or clay and plastic.
- **Pan Fire.** Make a fire pan out of an old portable barbecue grill, metal oil-drain pan, large disposable aluminum roasting pan, or metal trash can lid. Raise pan off the ground with rocks or logs, put sand in pan, then build the fire inside pan. After use, burn all wood to ashes, extinguish and broadcast the ashes over a wide area.



Gathering Firewood

Collect an adequate supply of the following types of fire-building materials:



Tinder - materials that catch on fire easily and quickly, such as small, dead twigs, soft wood shavings, pine needles, dead dry grass, “fuzzed up” peelings of cedar or birch bark and bundle of twine. Paper items should not be used because of their tendency to give off flying embers that are fire hazards.



Kindling - larger dead twigs and dry soft wood of finger thickness that break easily.

Fuel - large pieces of dry, dead wood from good sized branches up to logs. Break or cut to fit the size of your fire.

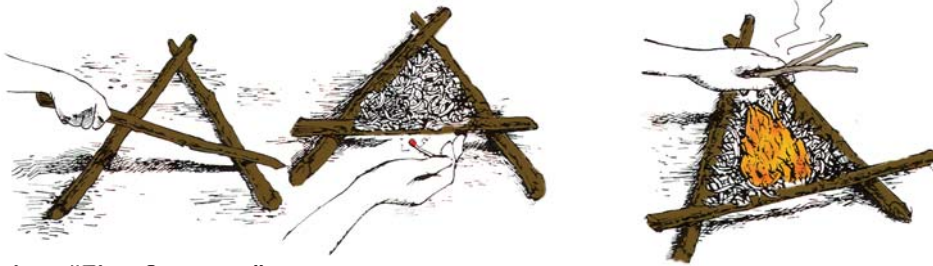


Types of Wood. Different types of wood are used for different purposes. Softwood (pine, cedar, spruce) is best for a quick, hot fire. Hardwood (oak, maple, hickory, ash, elm) is best for a long burning fire with lasting coals.

*“As Paul gathered a bundle of brushwood and put it on the fire, a viper came out because of the heat and fastened itself to his hand.”
(Acts 28:3)*

Starting a Fire

The Fire Triangle consists of the three elements needed for a fire: heat, air and fuel. To easily start a fire, use an "A" frame design. Form an "A" of small sticks on the ground with the open end of "A" toward the wind. Place a handful of tinder on the "A" frame. Strike match, cup hands to shield the match from the wind and hold the lighted match under the cross piece to ignite the tinder. Add more tinder and kindling slowly until the fire is burning with a good flame. Blowing or fanning gently will increase the flame. Slowly add fuel as needed, being sure that the fire can get plenty of a



Using "Fire Starters"

Starting a fire when it is very windy or when the wood is wet can be difficult. "Fire starters," prepared ahead of time, make it easier to start a fire when it is windy or wet. Some "fire starters" to make are:

Cardboard - cut cardboard into 2-3 inch square pieces. Stack several pieces and tie together with a string. Dip the entire bundle into melted paraffin. To use, light the string or a corner of the cardboard.

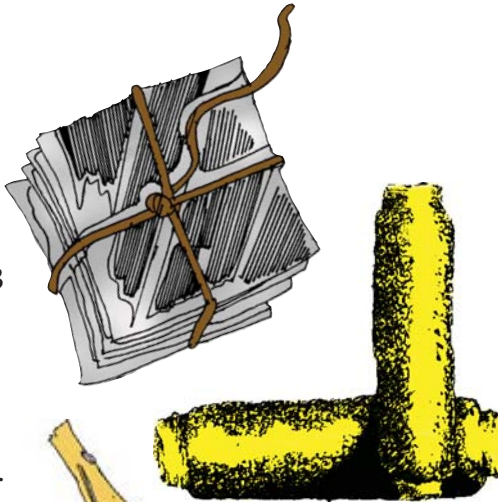
Corn cob - dried corn cobs light easily.

Fuzz Stick - whittle a fuzz stick and drive into the ground. Arrange tinder around the fuzz stick like a tepee. Light the "fuzz".

Egg Carton - fill the cups of a cardboard egg carton with lint from clothes dryer or wood shavings. Fill each cup half full of melted paraffin. Break off a cup and place it with your tinder. Light the edge of the cup.

Candle Stub - use a short piece of a candle as a fire starter.

Newspaper - roll up a single sheet of newspaper and tie with string an inch or two apart along the length of the roll. Cut between the strings and dip in melted paraffin. Place under tinder and kindling to light.



*"Without wood, fire goes out; without gossip, conflict dies down."
(Proverbs 26:20)*

Commercial Fire Starters

There are many different commercial fire starters that can be purchased from retail stores. Different types of camping will often determine which fire starters to take. A prepared camper will carry more than one fire starter to be able to start a fire quickly in adverse conditions. **Never use Coleman fuel or gasoline to start a fire because of their explosive properties.**



Types of Fires

Different types of fires are used for different purposes :

Warmth and Light

Tepee Fire - gives a quick hot fire for warmth and light. Build a tepee of branches around the tinder and kindling. Add sticks of same length, leaving plenty of air space.



"In the same way, let your light shine before men, so that they may see your good works and give glory to your Father in heaven."
(Matthew 5:16)



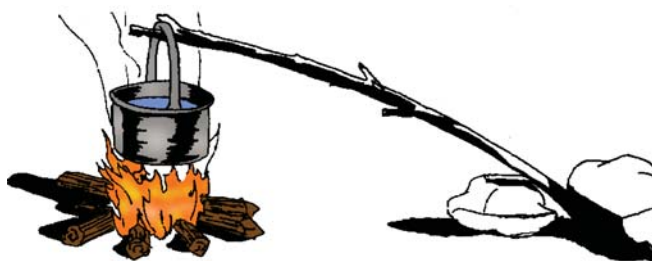
Criss-Cross Fire (Ceremonial Fire) - useful for warmth and light for a group. Build a tepee of soft wood kindling and place larger logs or split wood around the tepee. Criss-cross more logs over the first layer. Continue building layers of logs to about two feet high. Place tinder and kindling on highest layer and finish with smaller branches or split wood. Light the fire at the top and falling coals will light the tepee at the bottom.

Reflector Fire - build a wall of rock or green logs behind and on the sides of the fire to reflect heat. This makes a good wind break and the rocks continue to radiate heat even after the fire dies down.



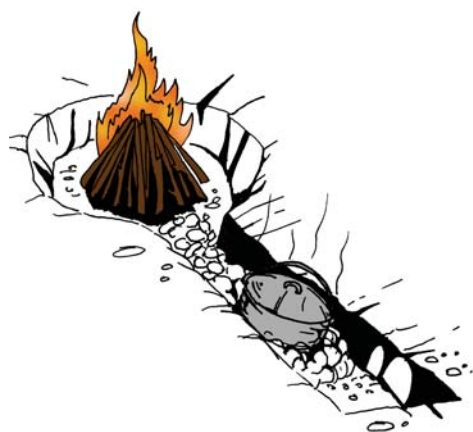
Cooking Fires

Hiker's Fire - build a small fire and suspend a stout branch over the fire to hold a pot. Anchor the branch with rocks.



Hunter's Fire - use green logs for sides spaced apart in order to support the cooking pots. Line up logs with the wind and build the fire between the logs.

Trench Fire - is the safest in windy weather and most comfortable in hot weather. Dig a trench, lined up with the wind, slightly smaller in width than your cooking pots and to a sloping depth of 6 to 12 inches. Build your fire in the trench and let it burn down to coals. Place the pots over the coals, with sides of trench supporting the pots.

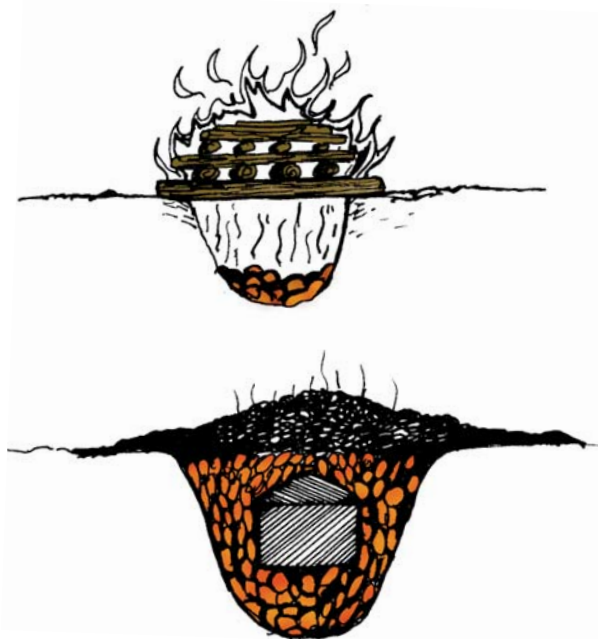


Keyhole Fire - a variation of the trench fire that allows for longer cooking times with a continuing supply of coals. Dig a round hole or outline a circle in which to build your fire. Dig or outline a trench extending from this circle, making the trench slightly narrower than your pots and pans. (Metal cross pieces can be used to support the various cooking containers.) Keep adding wood to the fire and as it burns into coals, rake the coals into the trench for a continuing heat supply for cooking.

Reflector Fire - build a log or aluminum foil wall behind your fire to reflect heat forward. Place a reflector oven on the opposite side to provide a baking surface.



Beanhole or Imu (E-mu) Fire - dig a large hole with plenty of room for a pot. Build a fire across the top. As the fire burns, coals will drop into the hole. Add kindling and fuel until the hole is filled with hot coals. Remove enough coals for the pot to fit into the hole. Place the rest of the coals over and around the pot. Cover with damp burlap and pack dirt on top. After four to six hours, your meal is ready.



Putting out a Fire

To put out the fire:

- Sprinkle water and/or dirt onto fire.
- Spread out the logs and coals.
- Sprinkle again.
- Carefully test for heat by running hands over the fire site to be sure fire is out.
- Repeat sprinkling until no heat is felt.
- Replace any soil and sod removed.

A good camper leaves the site as he found it, or even better. Try to leave the site without a trace that you have been there.



Buddy Burner and Tin Can Stove

- Notes -

Buddy Burner

To supply fuel for your tin-can stove, make a "Buddy Burner":

- Secure a small short metal can, such as a tuna fish can. Avoid using thin-walled or aluminium cans.
- Cut a strip of corrugated cardboard shorter than the height of the can. Loosely coil the cardboard strip and place in the can. An alternative method that produces a more controllable flame with much less smoke and soot uses two pieces notched to form an "X".
- Pour melted paraffin into the can and fill to just below the top edge of the cardboard. Allow it to cool.



Tin Can Stove

To make a cooking surface (stove) for your buddy burner:

- Secure a #10 metal can and cut the top completely out.
- Using tin snips, make two cuts wide enough apart and long enough to insert the buddy burner. Bend up the cut piece. Caution - sharp edges will be exposed, use leather gloves to protect your hands.
- Use a punch can opener to punch two or three air circulation holes at the top of the can on the opposite side of the square.

To use your tin can stove:

- Light the cardboard and place the Buddy Burner under the stove.
- Place food to cook on the top surface of the can, making sure the can is level. If using the stove more than once, cover the top with aluminum foil each time you cook.
- Cooking temperature and speed can be adjusted by turning the open square toward or away from the wind.
- If large enough, the bent piece can be used to toast your bread.
- Extinguish the burner by covering with a nonflammable object and allow to cool.

When using your stove, handle carefully because it is very hot and the inside of the can could be very black and sooty.



"For God so loved the world in this way: He gave His One and Only Son, so that everyone who believes in Him will not perish but have eternal life." (John 3:16)

- Notes -

*"So that the genuineness of your faith - more valuable than gold, which perishes though refined by fire - may result in praise, glory, and honor at the revelation of Jesus Christ."
(1 Peter 1:7)*

Charcoal Fires



Many areas of the country will not allow open wood-burning fires and sometimes weather conditions will require temporary burn bans. Always check the current fire regulations for your camping area prior to leaving. Charcoal fires, however, are usually allowed for cooking.

Small, adequate charcoal stoves may be purchased at camping or hardware stores. You can make your own by using a #10 or larger metal can:

- Cut one end completely out.
- Take a punch type can-opener and punch holes around the bottom and top for air circulation.
- Place charcoal in the bottom of the can, use a small amount of charcoal lighter and carefully light with a match.
- Place an unpainted mesh wire square or small grate over the top for grilling or to hold pans.
- Use pliers to handle hot grates and pans.



Hobo Stove



Allow at least 15 minutes for the coals to be ready after lighting. Chemical starters may be used but are very flammable and dangerous. Use only with care and supervision. The fire can be put out by sprinkling water on the coals.



Charcoal Starter

Camp Stoves

Camp stoves are useful and desirable when:

- There is concern about conservation practices and environmental damage (i.e.. depletion of wood, fire site scars, damage to trees and other plants, damage to animal habitats).
- An open fire would be dangerous because of windy or very dry conditions.
- Land managers prohibit open campfires. Check a particular area's fire-building rules before going.
- Cooking for a large group on an extended camp outing.
- A more reliable source of heat is desired anywhere, anytime and in any weather.

There is a variety of camp stoves using various fuels available from sporting goods stores.

Stoves for Base Camp Use

These types of stoves usually have 2 or more burners, are compact, can be easily closed up and carried, and have back and side wind-screens. They are too heavy and bulky for backpacking use.

Fuels for these stoves include:

- **Propane** - efficient and safe. Comes in pressurized canisters that will last 4-6 hours. Refueling is as easy as replacing the canister. They are dependable at high altitude and in very cold weather.
- **Butane** - comes in pressurized canisters lasting 3-4 hours. Refuel by replacing the canister. These are not dependable in very cold temperatures and lose efficiency as the canister begins to empty.
- **Coleman® Fuel** - very volatile. Must be carried, stored and used with caution. Refuel by filling stove's fuel tank. The fuel tank must be pumped to pressurize for use.

Always dispose of empty fuel canisters or cans by carrying them out to a designated disposal site.



Stoves for Backpacking

These types of stoves should be light, compact, easy to use and refuel. They may use propane or butane in pressurized canisters which attach directly to the burner. Some stoves also use Coleman® fuel. Metal containers of fuel must be carried for refueling the stove's tank.



For more basic, individual cooking - use a small, light, foldable pack stove with a can of Sterno® for fuel. These can be used with an individual cook/mess kit.

Choosing A Stove

With so many brands of stoves on the market, how can you determine which stove to buy? The following list of questions can help you in evaluating the qualities of a stove. The more questions that you answer “yes” to, the more desirable the stove.

- Does the stove have a good reputation for durability and handling?
- Is the stove already pre-assembled?
- Is the stove free of sharp protruding edges?
- Is the stove wider at the base than at the pot support?
- Can the stove accommodate a pot large enough to feed four people?
- Will the stove start without priming?
- Does the fuel tank remain cool while the stove is burning?
- Is there air space between the flame and the bottom of the pot when the flame is on high?
- Will the stove operate above 6000 feet altitude?
- Will the stove operate in below freezing temperatures?
- Can you justify the stove’s weight versus its dependability and cost?
- Does the stove burn multiple types of fuel?



Safety Factors to Consider with Camp Stoves

- Read and follow the manufacturer’s instructions for use and safety.
- Let stove cool before refueling or putting away.
- When replacing fuel canisters, be sure all connections are tight and have no leaks.
- Be sure stove is stable and will not tip over.
- Avoid flash and flare-up when lighting by following manufacturer’s guidelines.
- Keep all stove parts clean and lines and burners unclogged.
- Cap and store fuel cans or canisters in a safe place away from stove or heat.
- Use stoves outside - never in tents.
- Never use gasoline as a stove fuel. It is too dangerous.
- Use pots and pans the right size for your stove.
- Test the stove and know how to use it before taking it on a camping or backpacking trip.
- Even when empty, keep fuel containers away from heat.

Factors Influencing Stove Efficiency

- Altitude - the higher the altitude, the longer the cooking time.
- Temperature - very cold temperatures reduce efficiency.
- Wind - increases cooking time by blowing flame away from pot.
- Pot Lid - covered pots cook faster.
- Amount of fuel - full tanks heat faster than "almost empty" tanks.
- Type of food - "add hot water" foods are faster than "simmer an hour" foods.
- Distance between the flame and the pot - the closer the better, but the flame should not touch the pot.
- Size of flame - wider flames cook faster.

Tips on Firecraft

- When putting out a fire, remember the Fire Triangle. Removing any one of the three elements will put out the fire.
- Remember to keep the wood pile covered to protect from moisture.
- If your logs are wet, use an axe or mallet and wedge to split one. The inside of a split log will often be dry and should be easier to light and burn.
- Never leave an area until you have verified the fire is completely put out.
- Check to see if any burn bans are in affect and if any fire permits are needed.

