

## Fire Building Class Handout

What if we had a local disaster like the Haitians and were without utilities or could not live in our homes for an extended time period. How do we Cook, Heat, Purify water and etc.? Many of their citizens are still living in tents and eating mud cakes to satisfy their hunger pains.

2–3 times per month I am asked to teach primitive fire building methods to various groups. Primitive skills are perishable; these skills need to be practiced often. During a disaster our matches and or lighters will fail us at some point - We need to know how to build a life-saving fire using primitive methods.

Michael Jensen, from Denmark, Willie Handcart Company 1856 – “The way we made fire was to take some sagebrush chips, a little cloth and then a flint and rubbed it on steel until it made a spark which caught on the cloth and finally we could coax it into fire.” - Tell My Story Too

John Oborn, from England, Willie Handcart Company 1856 – “We did not have a means to make fire, if our fire failed to keep over night I had to walk to Draper to get live coals. On my way back to Fort Union, I would have to add dry wood and fan the coals into a blaze, to create fresh coals and continue home.”

**Benefits of Fire:** Fire is magic, it has a positive psychological effect – Fire is comforting - Fire is our friend, when we are lonely or frightened. Fire is a tool - With fire we cook - Avoid hypothermia - Warm ourselves - Dry our clothing - Light our way - Signal a friend - Purify our water – Build a fire bed – Use coals to form our tools and etc.

### Fire Making Supply List:

- Fixed blade knife (Mora Companion MG HD Carbon ~ \$17)
- Used hack saw blade ~ 3 inch length
- Cattails – the hot dog
- Juniper, Sage or Birch bark outer bark  
Cottonwood or Aspen inner bark
- 100% cotton balls & Vaseline
- Charred Barks / Punk wood / Cotton Cloth
- Jute or Sisal cord / rope
- 35mm film canister with lid
- Fat wood (Lowes Starter Stikks)
- Ferrocium rods
- Monk’s cloth
- 4-inch tin with lid
- Pitch / Sap
- Mountain man striker - Flint or Agate
- Phragmites flags - Rabbit bush flowers – Cottonwood or dandelion fluff
- Fire bow method: Bow / Cord / Hearth board / Coal catcher / Bearing / Nest
- Parabolic lens from a large flashlight

### Tool Sources:

We purchased several Ferrocium rods - the BlastMatch broke easily – Better StrikeForce and Swedish FireSteel Army or Scout. My favorite - Swedish FireSteel Army. Mountain man strikers, Flint or Ferrocium rods they can be purchased from [www.campingsurvival.com](http://www.campingsurvival.com) (800) 537-1339 Ext 222 or 223. Discounts are given for larger quantities. Use Cabala’s or Sportsman’s Warehouse for smaller quantities. Or purchase Fire Steels and Flint from Red Hawk Trading Malad ID (800.403.Hawk). Purchase solar parabolic lens from Sun Dance Solar <http://store.sundancesolar.com/solar-fire-starter-solar-lighter-survival-tool/>

The following Flame Temperatures of flammable materials may be of interest to you:

Cigarette	1100 F	Organics	Butane lighter – Propane or
Match flame	1300 F		Wood - 3,600 F
Rubbing Alcohol	1400 F	Ferrocium rod	5400 F
0000 Steel wool	2500 F	Electric spark	2400 F
Candle	2550 F		

### **Preparation before building your fire:**

Clear the area of all debris - 10 feet across, down to bare dirt - Hollow out a fire-hole two feet across and six inches deep. Pile the soil around the edge of the fire hole. Construct a ring of rocks; this will help contain the campfire's ashes. Avoid areas with overhanging branches. No fire should be lit close to trees, tents or other flammable materials. Have a bucket of sand or water, a shovel and a fire extinguisher on hand to smother and douse the fire if it does get out of the fire pit. Do not use green or freshly cut wood.

### **Group together different sizes of wood:**

**Tinder** - a material that catches on fire easily; dead twigs the diameter of a match, shavings of soft woods, bark of cedar, juniper, sage, birch or pine splinters, grass, dry needles, 100% cotton balls, 0000 steel wool, cattail down, 91% rubbing alcohol, jute cord, sisal cord or dryer lint, these all light immediately.

**Kindling** - the next size up, it needs to burn long enough and hot enough to set fire to the Fuel. Small sticks 1" around or less, twigs the size of a pencil.

**Fuel** - is larger wood that keeps the fire going. Fuel ranges in size from branches to logs.

**Softwoods**, like pine, fir and cedar, are best for starting a fire. **Hardwood**, like birch, maple and oak, is best for making a bed of hot coals.

### **Storing Your Firewood:**

Stack your wood at least 10 feet from fire, so that the pile does not catch on fire, also place two poles parallel on ground and stack firewood on the poles to protect it from ground dampness and cover with a tarp.

### **Extinguishing the fire:**

**Supervision** - Make sure someone is responsible for the fire at all times. Near the fire there should be a bucket of sand or water, shovel and a fire extinguisher to extinguish out of control fires.

- Sprinkle a handful of water on the flames; continue to sprinkle until the fire has gone out.
- Stir the fire with a stick and sprinkle some more. Repeat as needed until the fire is DEAD OUT!
- Mix soil, water, and ashes until all embers are completely out.

### **Building the Fireplace:**

In the absence of wind, smoke will always draw toward the nearest large object. Put a large flat rock at the rear of the fire pit to act as a chimney. The "chimney rock" will direct the smoke up and away from the fire area. As soon as the last flames die down leaving mostly white coals, use a stick to push the coals into a high level at the back end and low level at the front. This will give you the equivalent of High, Medium and Low cook settings. To cook, set your pots on a grill, rocks or green logs.



### **Wet conditions:**

Here are some ideas for wet conditions. We will experience building and maintaining a fire during rain and snow. Gather well in-advance many days worth (3-7) of Tinder - Kindling and Fuel. Protect these items from moisture. Build a platform of rocks or green wood then build a fire on top of this platform to help keep your fire above the ground moisture. Using Pitch / Resin / Fat wood helps to create a fire during wet conditions, maintain a supply of it. Always, light and use a candle first to start your fire rather than striking several failed matches. Protect the striker on the matchbox or butane lighter from moisture; the smallest amount of moisture will prevent the striker from creating a spark, rendering the lighter or matches useless. Use a tinder of 100% cotton balls coated in Vaseline, they are water resistant and will burn several minutes to help get your fire going. In a deluge, you may need to use a lean-to tarp to protect the fire during the downpour or you may have to wait until the storm passes. Plan and cook some meals in advance for these difficult periods. One may need to split a log or branch in order to access the dry inner wood.

If we were to experience a disaster someday, I would suggest purchasing SEVERAL Swedish FireSteel Ferrocerium rods. Starting a fire 3-4 times per day during harsh conditions you will find your fire building tools wearing out quickly.

### **Life Expectancies:**

**BSA Metal Match - 10-minutes to 1-month - Personal experience**

**Swedish FireSteel - Approximately 4-months**

### **Charred – Cloth, Plant Material or Punk wood - Do-It-Yourself Fire Starter**

Making char cloth is an important fire skill. Char-cloth is heated at high temperature in the absence of oxygen to drive off flammable solids, leaving a black cloth, which catches and holds a spark. Making char-cloth is not difficult. All you need is a can with a lid and some cloth. The lid needs to fit tightly. Punch a 1/16-inch hole in the lid. Char cloth is made of heavy gauge cotton cloth, like Monk's cloth – Denim - Tee shirt or Terry cloth. Cut the cloth into 2-inch squares and put them in the can loosely. Fill the can, but not so much as to compress the squares. Put the lid on and set the can in an open fire. As the can heats, you will see gases of yellow / white smoke begin to stream from the hole in the lid. When the smoke stops coming from the hole, drag the can off and let it cool. If you open it too quickly, while the can is hot, the rush of oxygen will cause the cloth to burst into flames, and you'll have to start over. Good char cloth is black and yet still has a lot of strength. It should not fall apart from ordinary handling. If it's more like black ash than black cloth, you cooked it too much. If the squares are brown instead of black or if it is obvious the cloth hasn't been heated evenly, put the top back on and cook it some more. The cook time is approximately 10 minutes on hot coals. Store the char-cloth in something water tight. Use the char-cloth to build fires utilizing primitive fire making tools like Flint and Steel or a Fire Piston.



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