TROOP 46

Firem'n Chit Lesson

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(1) Introduction : The ability to light a fire (and maintain it) is one skill that can truly make the difference between life and death. Humans do not perform very well when they are cold. *You can freeze to death in the outdoors!* A problem today is that few people have the opportunity to practice the skill of successfully building and maintaining a fire.

The Firem'n Chit card is granted to Scouts who have demonstrated the proper procedures for starting, maintaining, and extinguishing lighting devices, cooking fires, campfires, and lanterns. Scouts are not permitted to start, maintain, or extinguish troop lighting devices, cooking fires, campfires, or lanterns unless they are in possession of their Firem'n Chit card.

The Firem'n Chit card will be issued by the Scoutmaster at the end of this training. Scouts will sign their card indicating agreement to abide by Boy Scouts rules with respect to fires. If the Scout feels that he cannot abide by the rules on the front and backside of the Firem'n Chit card, he will not be issued a card.

(2) Objective – The purpose of this session is to train Scouts on:

a) The proper method for working with fire, campfires, cooking fires (wood and propane), and lanterns (propane).

b) How to build campfires.

c) How to build cooking fires.

d) How to light lanterns and propane stoves.

(3) Materials – Needed materials for class:

a) Matches
b) Magnifying Glass
c) Friction Fire Starter Kit
d) Tender Samples (in plastic bags) – do not use the tender samples – get your own!
e) Kindling Samples (in plastic bags) – do not use the kindling samples – get your own!
f) Patrol Stove
g) Butane Lighter
h) Sample Firem'n Chit Card
i) Fuzz Stick – do not burn the fuzz stick – make your own by using the pine stakes.
j) Shovel
k) Water Bucket
l) Propane Bottle

(4) Firem'n Chit Card (Discuss the front and backside of the Firem'n Chit card. Have one card to pass around. Discuss the responsibility rules on the front and back of the card.)

Firem'n Responsibilities (Discuss each with the Scout)

a) I have read and understand fire use and safety rules from the Boy Scout Handbook.

b) I will secure necessary permits (regulations vary by locality).

c) All flammable vegetation must be clear at least 5 feet radius in all directions from fire (total 10 feet in diameter).

d) Fire must be attended to at **ALL** times.

e) Fire-fighting tools must be readily available (shovel and water/dirt/sand))

f) Fire must cold to the touch before it is left.

g) I subscribe to the Outdoor Code and Leave-No-Trace-Camping.

Firem'n Chit Privileges (Discuss with Scouts): Firem'n privileges can be taken away if a Scout fails in his responsibility. Typically, corners are cut from Firem'n Chit card for each infraction. If four corners are cut away or you conduct a serious infraction with fire – the card is taken away. You will have to re-earn your card by re-taking this class from a senior scout. You may not manage a Troop campfire, cooking fire, or light a lantern without being in possession of your Firem'n Chit card.

5) General Information on Building Fires (Discuss with Scouts)

a) It is better to use a propane cooking stove than building a cooking fire.

b) Campfires should only be built in locations where previous campfires have been built.

c) Fires leave scars with long lasting effects on the Earth. Fire destroys all of the minerals in the soil. Making a new fire pit should be the option of last choice – and only used for heat. Using previously established fire pits is OK – the damage has been done.

Some localities or campgrounds require a permit to build an open fire. You need to know before you build the fire. Ignorance of the law is no excuse

(6) Fire Safety Rules (Discuss with Scouts)

 Do not build a fire when conditions are too dry. The Ranger in a park will usually post a "No Fire" sign. Build a fire ring or dig a pit. Try to use existing fire rings or pits. Fire rings should be surrounded by dry rocks.

 If you are removing sod to make a fire, take the sod out in squares. The squares should be dug out at 6" in depth. Save the sod to re-install later. No more than four square feet of sod should be removed. Place sod in a shady location with the grassy side up. Always ensure 5 gallons of water (or plenty of sand or dirt) and a shovel are available by the fire.

 Clear a 5' radius area encircling the fire. This includes removing any items that may be tripped over. Check above the fire ring to make sure there's no flammable vegetation. Ensure that fires are a safe distance from tents, tarps, ropes, propane and other fuels, bushes, trees, and any other flammable materials.

 NEVER have a flame in a tent, including lit matches.

 Do not play with matches.

 Do not wave or throw burning sticks. Once a stick is lit, it must stay in the fire. **This is a source of continual problems with Scouts. Get caught – loose a corner.** Do not put rocks from streams, lakes or ponds - these may explode and cause injuries.

 Do not put sealed cans in the fire - these may explode and cause injuries.

 Do not put plastic in a fire - it releases dangerous fumes.

 Do not jump over, wrestle around, or run near fires.

(**7) General Information on Fires (Discuss with Scouts)**

a) The three things needed for a fire (called a "Fire Triangle") are:

i) Oxygen
ii) Fuel
iii) Heat

b) The three types of firewood are:

i)Tinder (dryer lint, wood shavings, birch bark, tinder fungus, pine resin, dry grass, dry pine needles, wood shavings). You should always keep a supply of tender in a dry plastic bag in your camping gear or backpack. **Be Prepared! (Show examples of tinder.)**

ii)Kindling (fuzz sticks, small pieces of wood, up to the diameter of one finger) **(Show examples of kindling. Have Scouts try to build a fuzz stick.)**

iii)Fuel (various sizes of wood, larger than kindling)

Fuzz sticks are the true woodsman's fire starters. And whittling fuzz sticks is an excellent test for proving your skill with a knife.

c) Green or wet wood must be dry enough for the surface to catch

(8) Starting the Fire with Matches (Have Scouts practice lighting a match by cupping hands.)

a) NEVER use flammable liquids (e.g. gasoline) to start a fire
b) It's OK to use fire starter sticks
c) It's OK to use a butane lighter, but store the lighter out of the sun
d) Start with small, easily burnable material (tinder), move up to larger sticks (kindling), then to larger pieces of wood (fuel)
e) Use of matches
   i)Crouch down as close to the fire as possible. Shield the flame from the wind with your body.
   ii)Strike the match and keep it lit in cupped hands. Most matches go out because people try to light something with a match before the match is properly lit.

(9) Maintaining the Fire (Discuss with Scouts)

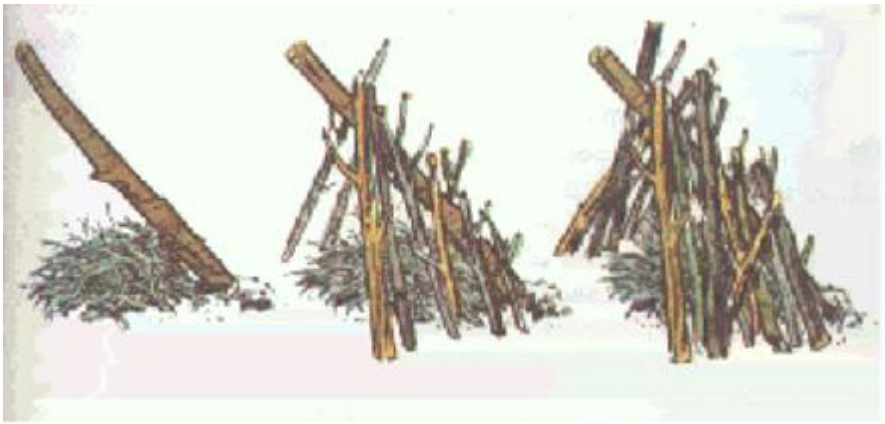
a) Only **ONE** person in charge of the fire at a time

b) Fire must be attended at **ALL** times. If the fire is not going to be attended, it **MUST** be put out.

c) No playing with the fire – do not poke at the fire; stay out of the fire ring

(10) Types of Heating or Campfire Fire Lays (Have each Scout in your group build at least one of the fire lays. If you have fewer than three Scouts, the instructor and/or the Scout(s) will have to build all three lays. Ensure that the Scout views all three fire lays. Start at least one of the lays so you can practice extinguishing procedures.)

a) Lean-To



i)Start by placing a green "lean-to" stick in the ground at a slant. *Question – Why use a green stick? Answer: It will burn slower and maintain the Lean-To.*

ii)Point its tip into the wind. This stick should hold the tender upright while the tender is burned out

b) Tepee

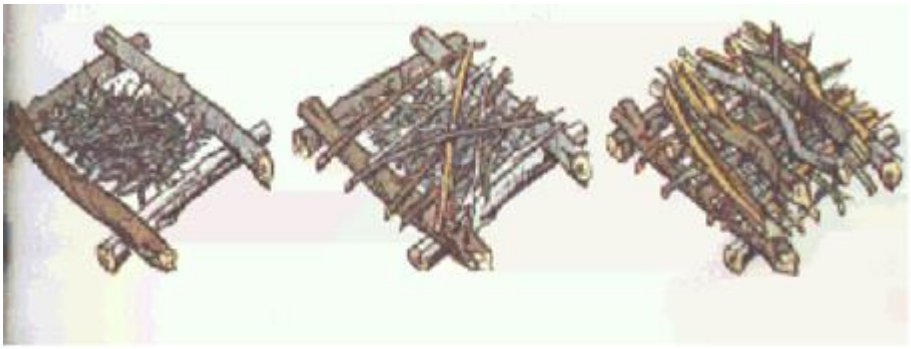
i)Start by placing a large handful of tender in the middle.
ii)Lean a circle of kindling around the tender. The tips should come together like the poles in a Indian teepee.
iii)Feed fire from down wind side. Add fuel after the fire is started.

c) Log Cabin - Ideal council fire for a whole camp of scouts. It consists of crisscross made from logs at the bottom. The smaller crisscross fire lay is made from branches on top. Start the fire at the top with the smaller pieces of wood. As the campfire progresses, it will ignite the lower wood.

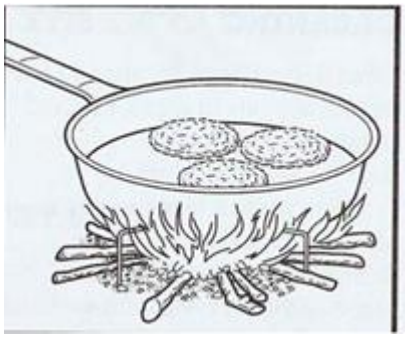
(11) Types of Cooking Lays (Have each Scout in your group build at least one of the cooking fireplaces. If you have fewer than three Scouts, the instructor and/or the Scout(s) will have to build all three lays. Ensure that the Scout views all three fire lays.)

a) Criss-Cross – Used when you need a bed of coals in a hurry for boiling or baking.

i) Place two sticks (1 ”-2” diameter) on the ground parallel to each other about 1 foot apart.
ii) Place two sticks (1 ”-2: diameter) perpendicular to the original stocks. Place on end to form a “stick box”.
iii) Put kindling inside the “stick box”.
iv) Place kindling sticks crosswise over the two supports. Ensure that the sticks are a “little finger width” apart.
v) Continue with more crisscross layers. Increase the thickness from layer to layer.



b) **Three Point –** For a single pot or pan, stick three metal tent stakes into the fire lay before you start the fire. The metal tent stakes will hold a frying pan. .



c) **Hunters –** Place two logs on the ground. Separate the logs according to the width of your pot. Put a handful of tender and kindling against the logs. Build up the fire lay with thicker and thicker fuel then ignite the tender. Since the fire eats the logs from the inside they will have to be replaced from time to time.

(13) Putting out the fire. Do in order:

a) Spread the coals with a shovel or stick.

b) Sprinkle water on the fire to begin to cool it. A big steam of water could cause burns through steam or splattering water.

c) Continue to put out the fire with water or dirt. Stir the ashes and coals to ensure that they are completely out. The fire is out when the ashes and remains may be touched with the bare hand. This is called a Cold Out Test.

d) If water is scarce, use sand or dirt to put out the fire

(14) After you are done (Reconstruct the area when the fire was lit.)

a) If an area was cleared for the fire, the ashes should be scattered and the area returned to its original state - i.e. cover the area with leaves, sticks, or whatever was there before.

b) Rocks that were used to form a fire circle should be turned over and put back.

c) Replace any sod if it was removed.

(15) Other ways to start a fire (Have the Scouts try each)

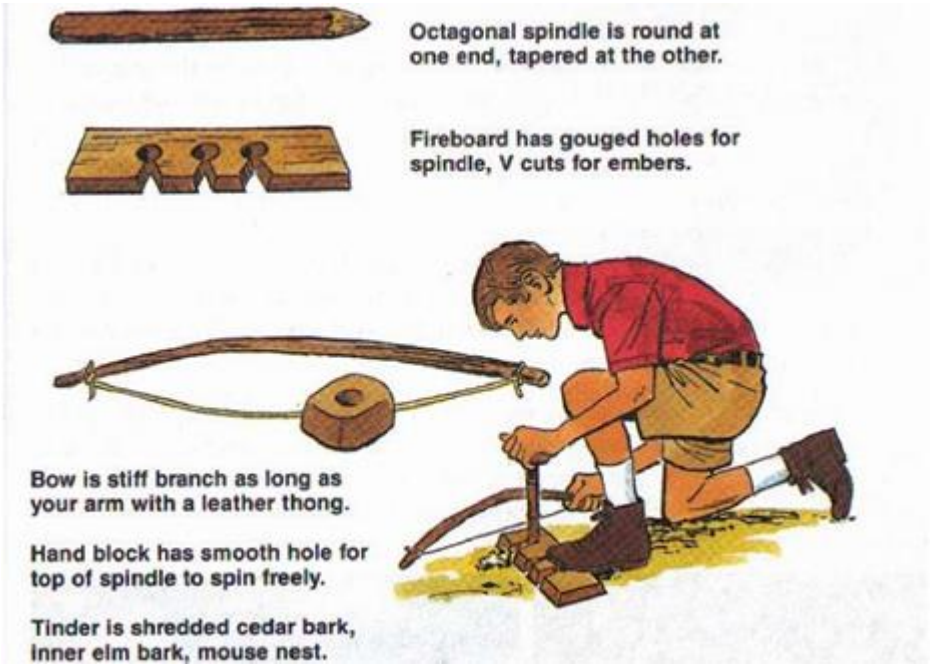
a) <u>Flint and Steel</u> – Flint is a hard gray rock with smooth faces and sharp edges. Use a piece of steel such as a small file. Make a spark catcher. How?

Make the spark catcher from a 3" square piece of cotton or linen. Put it in an empty cofee can and light it with a match. When the cloth is burning, place a lid on the can to smother the flame. The cloth should only be charred, not turned to ash. A bit of lint from the screen of a clothes dyer makers a good spark catcher.

▲ SPARK CATCHER

After you have laid a fire, gather a handful of very fine, dry tender. Lay it on the ground and nest a bit of spark catcher in the center. Hold the flint over the tender. With the steel, strike a glancing blow against the flint, knocking sparks into the spark catcher. Gently blow on the tender until it catches fire.

b) Fire by Friction – Use the device in the kit. Put some very fine tender under the fireboard notch, then kneel with one foot on the board. Twist the bowstring around the spindle and hold the spindle upright with the hand piece. Press down on the spindle to keep it in the fireboard hollow. Turn the spindle with long, steady strokes of the bow. Keep going until heavy smoke pours from the notch. Lift the fireboard and tender together and blow on the ember in the notch until it ignites the tender. Slide the flaming tender under your fire lay.



c) Fire by Glass – On a very bright day, you can start a fire with a magnifying glass or a lens of a pair of thick eyeglasses. Move the glass until it focuses the sun's rays into a small, brilliant point of light on your tender. In a few minutes, the fuel should begin to smolder. Blow on the smoldering tender to start a fire.

(16) Using a camping stove (Have Scout demonstrate lighting a stove and lantern.)

a) There are two types of common fuel for camping stoves
   i) White gas (Coleman fuel)
   ii) Propane

b) All cooking in this troop is done on propane stoves – the only exception is backpacking stoves. Some backpacking stoves use white gas. Check with an adult prior to lighting a backpacking stove using white gas.

c) Setting up Propane Stove
   i) Make sure the stove is level
   ii) Make sure the stem is securely tightened to the stove
   iii) Make sure the on/off to the stove is in the off position
   iv) Take the cover off the propane bottle and store it away to place back on the bottle when putting away the stove
   v) Take off the paper wrapper to the propane bottle to indicate this is the bottle in use
   vi) Screw the bottle to the stem making sure the bottle is tight
   vii) Light the match or lighter and hold it to the burner
   viii) Turn the on/off switch to on and light the burner
   ix) If the stove does not light immediately turn everything off and then retry.
   x) If the stove does not light the second time, contact the SPL or Scoutmaster.

(18) Common problems & misconceptions (Discuss with Scouts)

a) **Misconception:** If a fire "looks" like it's out (no smoke), it's really out

b) **Problem:** Leaving the fire unattended for "just a few minutes" is OK.

c) **Problem:** Playing around the fire

d) **Problem:** More than one person attending the fire

(19) Final comments (Discuss with Scouts)

a) Always use common sense – these rules can't possibly cover all situations.

b) These privileges can be taken away if you fail to act responsibly.

c) You can waterproof a match by dipping the head of the match in melted wax.

d) You can make a fire starter with lint and wax or clothes dryer lint.

e) Never take tinder or fuel from a live tree.

f) Be 100% ready *before* lighting the match.

The Outdoor Code

As an American, I will do my best to

Be clean in my outdoor manners,

Be careful with fire,

Be considerate in the outdoors,

And

Be conservation minded.