Fire & Cooking guidance

Fire making is an important skill to learn – it is a great learning tool and team building activity. It is also provides opportunity for cooking and can provide some warmth – although this is often not practical for a group as the fire would have to be very large and potentially dangerous to provide much warmth for each person.

Fires with groups

The following information provides some guidance and tips for making fires with your groups – you should also see the Campfire cooking handout. Before you attempt any fires you need to be well practiced yourself and have agreement of the landowner and a suitable fire procedure, risk assessment and insurance to cover this activity before you begin. Also you will need to know if anyone in your groups has asthma or health problems that may be affected by smoke.

You will need to carefully consider carefully where you have fires and the impact this will have on your site – often having a fire in a container such as a fire wok is the easiest way to approach this. Having fires directly on the ground can be problematic if you have peaty soil or lots of tree roots underneath the fire can spread in to the ground as well as damaging the soil habitat and tree around you.

You will need to set out a safe space and get the group to practice moving carefully around this space before you have fires. It is important your group understands the risks around fire before starting and that they are ready for the responsibility of doing this activity. You will need to make sure you have all safety equipment in place suitable safe procedures as stated in your handbook.

General fire guidance:

Have a safe and suitable fire space with defined boundaries for group:

- have an inner defined boundary – no one allowed closer than this (consider size of fire, how far fire flames can blow in the wind and how much heat radiates).
- an outer boundary – no one allowed to move about in-between these two boundaries to prevent anyone falling in the fire(group to be kneeling or sitting on a stable log or low bench in this area)

Safety kit - Heat proof gloves, Fire blanket (that can be attached to a tree for quick removal), burns gel, tap or container with water in by fire(to treat burns) and plenty of extra water.

Don't use any chemicals to light the fire or burn any treated wood as you will poison yourself and the group.

Consider clothing – plastic and nylon melts easily from sparks and heat. Tie back long hair.

Collecting Fuel

As a starting point you can explore the fire triangle with your groups – you need oxygen, fuel and heat to create a fire and without one of these you will not be successful.

The first thing to start with is collecting suitable sources of fuel for you fire. It is important that you get your groups to gather wood appropriately and that you do not burn all dead fallen wood as this is a home for many insects, animals and fungi. You may want to create areas that do not have fire wood gathered from.

You will need to consider what sort of wood you burn and need to be familiar with the trees on your site. You should never burn treated wood from fences or outdoor structures as this is toxic. Also you should not burn elder, yew, laurel or other poisonous woods. The best material will be dead branches from native trees such as oak, sycamore, hazel, beech, willow and ash (see the fire wood poem at the end).

You need to make sure your groups understand that they should be collecting dead dry wood – so wood that is not rotten, wet or green/growing. This can be harder to do at certain times of year when the trees have lost their leaves or when it has been very wet. The key is getting them to feel the wood to make sure it is dry and bend it to see if it snaps easily and is brown and dead in the middle not green. The

best place to find dead dry wood is branches that have blown down and got caught up on other trees or undergrowth.

Sticks should be collected in varying sizes from matchstick thickness to two finger thickness. Ideally three grades should be collected and sorted:

- matchstick thickness and finger length
- finger thickness and hand to forearm length
- and two finger thickness and forearm length.

If you collect three large (width of your leg) bundles of these sizes this should provide enough material to boil a kettle or cook bread on a stick. For fires that you want to burn longer and cook more substantially on you will need to collect some larger pieces.

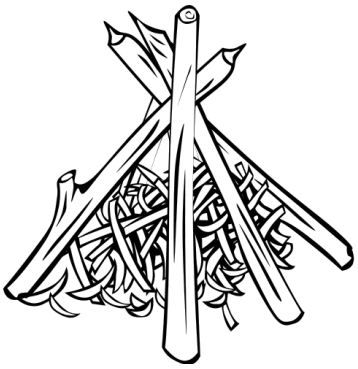
In addition, you will need some tinder to help light your fire. Tinders main purpose is to easily catch a spark or flame and to burn quickly to catch the main small stick bundle you have gathered. Some examples of good tinder are:

- Cotton wool
- Newspaper (although don't use too much as can send hot embers in to the air)
- Natural fibrous string – such as hemp and sisal.
- Birch bark
- Sweet chestnut or lime inner bark
- Dry grass (fibrous), leaves, bracken
- Feather sticks, fine wood shavings / scrapings
- Punk wood (dry completely rotten wood)
- Plant down – such as thistle seed heads.
- Charred wood or cloth
- Fungus – e.g, King Alfred's cakes

Feather sticks

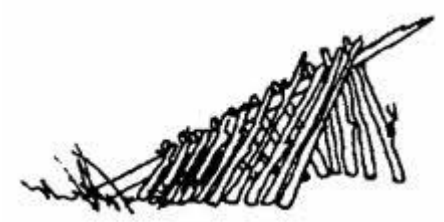
In addition, you will want to have some natural fire lighters – these are recycled cardboard impregnated with wax – do not get the usual paraffin based ones as they get on your hands and will flavour and tarnish any food near or cooked on them. On a damp or wet day you need something that will help dry you sticks and guarantee success. Also collect sticks at the end of each session for the following week and hang up or store somewhere dry.

Tepee



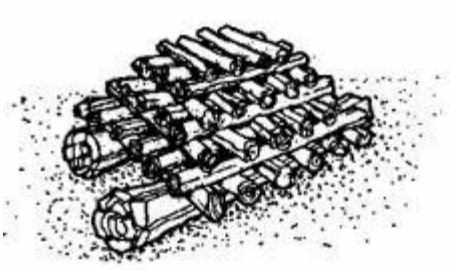
To make this fire arrange the tinder underneath and a few sticks of kindling in the shape of a tepee or cone. Light the center. As the tepee burns, the outside logs will fall inward, feeding the fire. This type of fire burns well even with wet wood.

Lean-To



To lay this fire push a green stick into the ground at a 30-degree angle. Point the end of the stick in the direction of the wind. Place some tinder deep under this lean-to stick. Lean pieces of kindling against the lean-to stick. Light the tinder. As the kindling catches fire from the tinder, add more kindling.

Pyramid



To lay this fire, place two small logs or branches parallel on the ground. Place a solid layer of small logs across the parallel logs. Add three or four more layers of logs or branches, each layer smaller than and at a right angle to the layer below it. Make a starter fire on top of the pyramid. As the starter fire burns, it will ignite the logs below it. This gives you a fire that burns downward, requiring no attention during the night.

<u>Extinguishing Your Fire</u>

When you are finished with your fire, even if it has burnt down, you must soak the area with water and stir the ashes to make sure everything is damp and cool. Make sure any larger logs that may have slightly caught on the edge are damped down as well. This is best done with a watering can or by pouring a water container between you fingers and sprinkling water evenly over the fire area. If required you may then need to take away or spread ashes and charred wood else where to leave no trace.

Campfire cooking

Cooking with groups:

- Hot water and soap and clean towels should be available for all to wash hands thoroughly.
- Keep ingredients separate and chilled as needed.
- Use ingredients that are fresh – and only use wild foods that you are confident to – further training can be important to develop this knowledge.
- Person co-ordinating food preparation and cooking to hold a Food hygiene certificate.
- Suitable clear and clean area for preparing food – or have it prepared in plastic boxes ready to go.
- Know any dietary needs or food allergies in your group.
- Don't allow anyone with an upset stomach to prepare or cook food.
- Don't start cooking until fire has died down to embers – as cooking on flames can be dangerous if wind fans flames towards your group and you will just burn your food.
- Have group kneeling on ground when cooking around fire.

Using Skewers to cook on

As part of the cooking activity get the group to responsibly cut green sticks (i.e. those that have been growing) for use as skewers for cooking on. The best sticks are sycamore, ash, hazel – something fairly straight and non toxic - remember to avoid elder, laurel and yew as these are toxic. You can sharpen the sticks with veg peelers and taking bark off on the bit of wood in contact with the food is a good idea as some barks can put a bitter flavour on the food. Cut skewers to about arm length so people do not get too close to fire. You can have a log for people to rest skewers on so don't struggle to hold it for a long time close to embers.

Fire construction

There are several methods for laying a fire, each of which has advantages. How you want to use the fire and where will determine which fire to use. All fires should ideally by laid on a dry surface or on a platform of large stick to raise them off the ground this also allows better airflow.

The Firewood Poem

Beechwood fires are bright and clear
If the logs are kept a year,
Chestnut's only good they say,
If for logs 'tis laid away.
Make a fire of Elder tree,
Death within your house will be;
But ash new or ash old,
Is fit for a queen with crown of gold

Birch and fir logs burn too fast
Blaze up bright and do not last,
it is by the Irish said
Hawthorn bakes the sweetest bread.
Elm wood burns like churchyard mould,
E'en the very flames are cold
But ash green or ash brown
Is fit for a queen with golden crown

Poplar gives a bitter smoke,
Fills your eyes and makes you choke,
Apple wood will scent your room
Pear wood smells like flowers in bloom
Oaken logs, if dry and old
keep away the winter's cold
But ash wet or ash dry
a king shall warm his slippers by.

The firewood poem was written by Celia Congreve, is believed to be first published in THE TIMES newspaper on March 2nd 1930.

Note that all woods burn better when seasoned and some burn better when split rather than as whole logs. In general the better woods for burning that you are most likely to come by are:

Apple and pear – burning slowly and steadily with little flame but good heat. The scent is also pleasing.
Ash – the best burning wood providing plenty of heat (will also burn green but you should not need to do this!)
Beech and hornbeam – good when well seasoned
Birch – good heat and a bright flame – burns quickly.
Blackthorn and hawthorn – very good – burn slowly but with good heat
Cherry – also burns slowly with good heat and a pleasant scent.
Hazel – good, but hazel has so many other uses hopefully you won't have to burn it!
Holly – good when well seasoned
Horse Chestnut – good flame and heating power but spits a lot.
Larch – fairly good for heat but crackles and spits
Maple – good.
Oak – very old dry seasoned oak is excellent, burning slowly with a good heat
Pine – burns well with a bright flame but crackles and spits
Poplar – avoid all poplar wood – it burns very slowly with little heat – which is why poplar is used to make matchsticks.
Willow – very good – in fact there is growing interest in biomass production of coppiced willow as a fuel.