

FIRE LIGHTING

ESSENTIALS

Fire lighting is a fundamental skill in Scouting. It is vital for cooking, keeping warm and as a focal point for camp activities. As such, being able to prepare, light and maintain different sorts of fires is very important. It is equally important to know how to extinguish a fire and to clear a fireplace correctly.

Three elements are needed to make a fire: oxygen, heat and fuel. This is known as a fire triangle. Typically, wood is the fuel for a fire, oxygen is provided by the air and the heat comes from a match or spark. If any of these elements are removed, the fire will go out.

GOOD PRACTICE

- Consider whether it is appropriate to light a fire. If conditions are particularly hot and dry, or if you are camping in an area with underground root systems or peaty soil, then the risks may outweigh the benefits.
- Preparation is vital. Collect plenty of dead, dry wood. This will typically be found off the ground, hung up in branches, but if it has rained recently, look under bushes and trees.
- Feed the fire, don't smother it, and pay particular attention in the early stages.
- Replenish fuel frequently as needed. Add fuel in handfuls rather than one stick at a time.
- If you struggle to light your fire or natural tinder such as birch bark to take the initial spark or flame.
- Cook over embers, not over flames, as it is these that produce sustained heat.
- Always return fire sites to their original state, leaving no trace that you have been there.

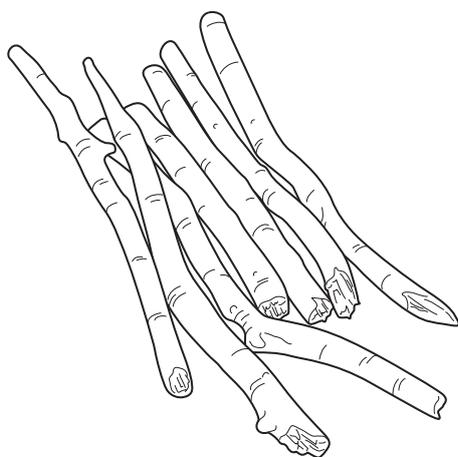
SAFETY GUIDELINES

- Stay calm when lighting fires, and no matter what happens, do not panic.
- Never use paraffin, petrol or methylated spirits to light or revive a fire.
- Choose the site of your fire with care, and never light a fire on peat, or in areas with underground root systems or low branches.
- Never leave a fire unattended.
- Never underestimate the potential reach of a fire or the strength of the wind.
- Ensure you can extinguish a fire quickly in case of emergency. Keep either a bucket of water, fire beaters or a pile of earth and a shovel close at hand.
- Carry firelighters and waterproof matches, a fire steel or a lighter to use in case of emergency.
- Keep long hair tied back when lighting fires.

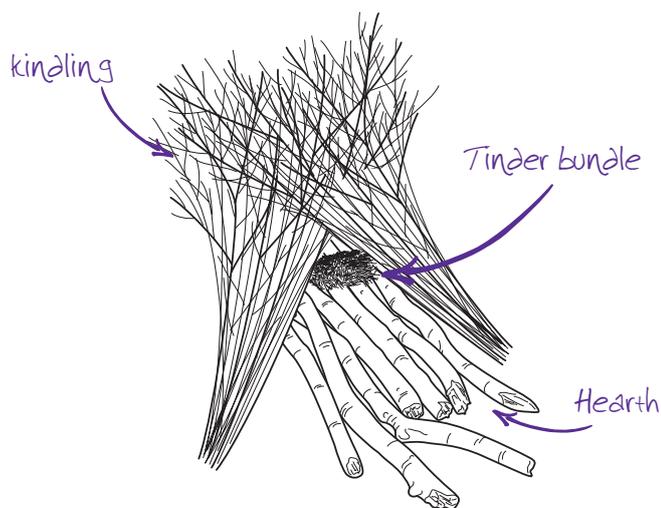
BUILDING A SMALL-STICK FIRE

1. Collect kindling and fuel, sorted by thickness. You'll need a bunch of matchstick-thick twigs for kindling and larger sticks of around thumb-thickness for fuel.
2. Choose a fire site, avoiding tree roots and overhanging branches. Clear the ground to expose bare earth.
3. Create a hearth by placing dead, dry sticks side by side.
4. Kneel with your back to the prevailing wind, knees and feet together to eliminate draughts, and arrange the

- kindling on top of your hearth in a flat or upright V-shape. Remember to leave a gap to insert your tinder.
5. Pack a bundle of tinder inside the V-shape.
6. Strike match, shielding flame, and take it to the tinder. Blow gently to provide oxygen if needed.
7. Add wood as necessary, gradually increasing the size of your fuel as the fire is established.



BUILDING A HEARTH



PACKING TINDER INSIDE V-SHAPED KINDLING

You must always ensure that any fire you make is fully extinguished. Ensure all fuel is burned to ash, scatter unused wood and do not burn plastic rubbish or foil in the fire.

- Extinguishing a fire with water: let the fire die down. Spread out the ashes and douse with water, being careful to avoid any steam that rises.
- Without water: let the fire die down. Spread out the ashes. Cover thoroughly with earth or soil. Do not use this method after dry weather, on peaty soil or in areas with underground root systems.

Try to minimise the impact of a campfire on the surrounding environment, eg by emptying fire pits and refilling them with earth before replacing turf.

FIND OUT MORE

There are many other types of fire. Further information can be found in the Nights Away resource, available from Scout Shops (product code: 101215) and in the books *A Complete Guide to Scouting Skills* (Doubleday, 2010) and *The Outdoor Adventure Manual* (Haynes, 2013).

LARGER TYPES OF FIRE

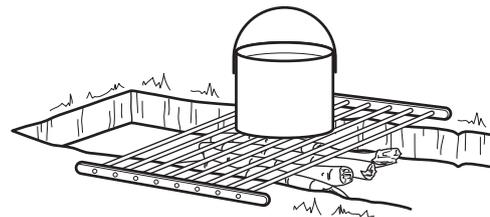
STAR FIRE

Place three logs in a star shape and light a small fire in the middle. As the logs burn, move them towards the centre. Place a circle of non-porous stones around the fire to prevent it travelling.



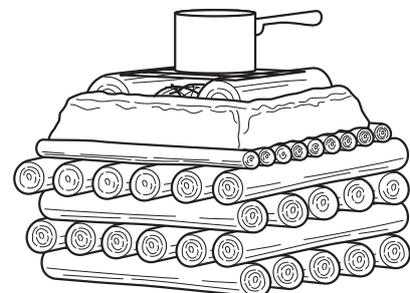
TRENCH FIRE

Dig a trench or pit parallel to the prevailing wind and place a screen of logs, bricks or stones along the sides. As the fire is built in the pit you are shielded from much of the heat, making this fire ideal for cooking on a hot day.



ALTAR FIRE

Today, most altar fires are permanent free standing structures, commonly used at sites that do not allow ground fires. It is possible to build one by laying large logs at right angles, or by lashing staves to form trestles. Make a non-flammable top from a metal pan or logs placed side by side and covered with mud.



WOOD BURNING GUIDE

All wood burns better if it has been seasoned. In simple terms, the word 'seasoned' means 'dry' and the term 'green' means 'freshly cut from a living tree'. The general rule is the drier the wood, the better. However, if a fire is well built, most wood will burn unseasoned.

EXCELLENT

- **Ash** – the best firewood, providing both heat and flame. Logs will burn when green, while small branches make good kindling.
- **Beech** – very good firewood if well seasoned, producing sustained heat and flame. It may give off a few sparks.
- **Blackthorn** – this native hedgerow tree produces small logs but is one of the best woods, burning slowly with good heat and little smoke.
- **Hawthorn** – another hedgerow tree that makes good firewood, burning hot and slow. Even smaller branches are worth using.
- **Oak** – old, seasoned oak gives excellent heat and burns steadily.

GOOD

- **Maple** – good quality firewood.
- **Sycamore** – burns with a good flame and moderate heat. The thinner branches of this tree make good kindling.
- **Cedar** – good firewood if well seasoned, giving little flame but plenty of sustained heat. This makes it a good option for a cooking fire. A cedar fire also has a pleasant smell. Thinner logs and branches will burn when green.
- **Birch** – produces good heat and a bright flame, but burns quickly. Unseasoned birch will make an adequate fire if nothing else is available. Birch bark also makes excellent tinder, even if damp, as it contains natural oils.
- **Hornbeam** – good firewood that produces a hot, slow-burning fire.
- **Apple** – burns slowly and steadily with good heat but little flame, and doesn't tend to spark or spit. Like all fruit woods, it has a pleasant smell and adding a few pieces to a cooking fire gives an excellent flavour to smoked foods.
- **Cherry** – burns slowly with good heat and a pleasant scent.
- **Pear** – another fruit wood that provides good heat and gives off a pleasant scent.
- **Plum** – good heat and a pleasant scent.
- **Hazel** – a good all-rounder but burns quickly. Smaller pieces make good kindling.

FAIR

- **Pine** – burns with a bright flame and produces a pleasant scent, but often crackles and spits. Pine is a resinous wood, so it can be used to keep a fire burning in wet weather. It also makes good kindling.
- **Laurel** – burns with a brilliant flame.
- **Rhododendron** – the thick old stems, being very tough, burn well.
- **Plane** – reasonable firewood that burns well, but can throw sparks if very dry.
- **Elm** – must be well seasoned due to its high moisture content. Burns slowly, giving constant heat, but can be smoky.
- **Holly** – burns well when seasoned, but very quickly when green.
- **Walnut** – not a common firewood, but burns with a distinctive scent.
- **Willow** – must be well seasoned and burns quickly.
- **Yew** – dense, slow-growing softwood that burns slowly with a fierce heat. The scent is pleasant, but it can spit and spark on a campfire.

POOR

- **Douglas fir** – well seasoned Douglas fir will burn slowly and produce good heat, but in general it is unsuitable for a campfire as it gives little flame and has a tendency to produce sparks.
- **Larch** – if well seasoned it gives good heat but is liable to crackle and spit excessively.
- **Spruce** – burns quickly and produces many sparks.
- **Horse chestnut** – good flame and heating power but considered poor firewood as it spits a lot.
- **Sweet chestnut** – burns when seasoned but spits continuously and excessively, making it generally unsuitable for campfires.
- **Alder** – burns quickly and produces little heat.
- **Lime** – poor quality firewood.
- **Poplar** – burns very slowly and produces little heat. It makes poor firewood.
- **Elder** – burns quickly with plenty of smoke and produces little heat.