Fire Building

Heat

Each piece of wood in your fire stays hot enough to burn by getting heat from other burning pieces of wood. Separated pieces soon go out. Wood pieces share heat through radiation and convection as they burn. Radiation is the warm glow and convection is the hot gas of the flame. Since flame largely goes straight up, wood gets heated most from wood burning below it. Vertical stacking is key.

Conditions

Under ideal conditions of dry wood, moderate temperature, and no wind, a loose heap of small twigs is easy to light. When it's cold, wet, or windy, when you might really need a fire, try one of the structures below.

Tepee

You can create a tall pile rather than a wide pile by leaning the sticks up in a vertical fashion rather than laying them horizontally. An empty tepee is shown in figure 1. To build this, jam one or two sticks in the ground and lean others against them to form a tepee shape with an opening facing toward you. Put your best kindling and your fire starter inside and burn down the house. Tepees start easily but tend to collapse after a while and they're very hard to build on bare rock or very hard soil.



Figure 1

Tepee

Log Cabin

Another approach is the log cabin arrangement. Begin the log cabin in Lincoln Log style as seen in figure 2. Put your fire starter and any promising kindling inside the cabin, build up the walls, and optionally add a flat roof of twigs across the top (not shown). Make two or three passes of roof twigs of various sizes but don't make the roof so tight that air won't easily flow up through it. Burn down the house. The log cabin may not start as easily as the tepee but it's more stable and can be built on a hard surface like rock.

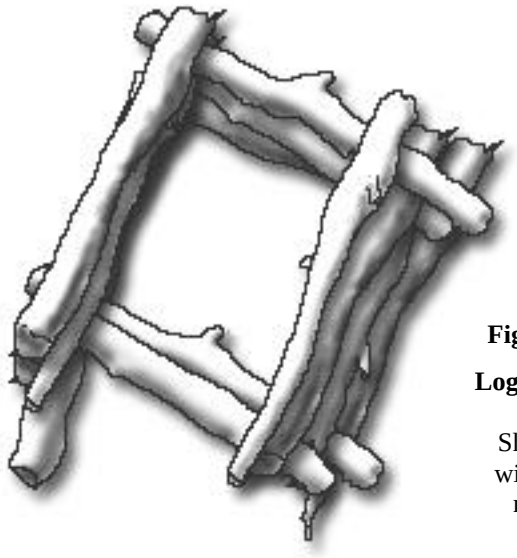

Figure 2

Log Cabin

Shown without roof

Misc.

- Dry your wet wood at the edge of the fire.
- Take care to start a campfire, not a forest fire.

Fire Starters

Ignition

Stormproof matches are a very reliable fire igniter. They won't blow out as they burn their large chemical coating. Fire steel strikers are also very reliable when used with the right tinder. Under good conditions, more ordinary matches and lighters work too but they may fail under wet or windy conditions.

Fire Starters

A fire starter should be easy to light and it should burn for at least a few minutes. The long lasting flame allows small twigs to reliably light under adverse conditions.

Fiber

Cotton balls (not synthetic), or cotton dryer lint, soaked in wax or petroleum jelly, make inexpensive and effective home-made fire starter. They may be started with a match or fire steel striker. Similar commercially produced tinder is also available.

Pressed Cellulose

Mixed and pressed sawdust and wax and similar cellulose fire starters are available in stick or ball form. These are harder to start and more prone to going out than the fiber fire starters, but they may burn longer. Fire steel strikers are ineffective at lighting these.

Paraffin

Wax from candles can be shaved and mixed with collected tinder to create an effective fire starter. In the absence of wind, a candle can be used as a long lasting heat source to dry and eventually ignite wet sticks.

Paste

Fire starting paste works as a fire starter and it is also useful for priming white gas stoves. It has a relatively short burn time.

Alcohol Hand Sanitizer

Hand sanitizer can be mixed with tinder in a pinch to create a fire starter with a short burn time.

White Gas

White gas can get the job done. However, it can be hard to apply a measured amount or direct its placement and it has a short burn time.

Magnesium Bar

Magnesium seems like it should be an effective fire starter because it burns at a very high temperature. In practice, the shavings are hard to light and the very short burn time makes it ineffective at starting a fire.