

# Fire building techniques

In a survival situation, building a fire can make the difference between life and death. A fire can keep you warm in an exposed environment, help you cook food to eat, or allow you to heat and purify water for drinking. Fire can also help you signal for help, protect you from animals, and sterilize first-aid supplies. In order to have a fire, it's important to understand the basics of how to start a fire and how to keep one going.

## Understanding the Fire Triangle

Three basic items are necessary for fire construction: air, heat, and fuel. Think of these three essential elements as the sides of a triangle necessary to build and support a fire. Fuel, alone, won't burn, but if you apply heat to a fuel, it produces a gas. And when this gas combines with the oxygen in the air, it burns. A fire will burn to its best potential when these three elements exist in an optimal ratio. The best way to learn how to balance these elements is to practice, so get outside, and get started.

## Selecting and Preparing a Fire Site

When selecting a site for a fire, survey the scene, and consider a few basic things before preparing the site. You want to find a dry spot that is protected from the wind. And you want to make sure that you will be able to contain any fire that you build while being in close proximity to your fuel source. If you build a fire in a forested area, for example, clear any brush or foliage from the ground until its surface is dirt or rock. Contain your fire site by clearing an area of at least three feet in diameter, and build a fire wall around the cleared area by stacking rocks in a circle. A fire wall can also be built to direct heat in a certain direction, contain sparks, and deflect wind.

## Selecting Fire-Building Materials

In order to start a fire, you need something to burn. Gather enough of these three basic fire-building materials: tinder, kindling, and fuel. Tinder can be any dry material that's easy to light with little heat. Pine needles, dry birch bark, and straw are examples of materials that can be used as tinder. Kindling is normally larger than tinder, and it is the dry, easily combustible material that you can add to burning tinder to increase a fire's temperature. Examples of kindling include small strips of wood, small twigs, or cardboard strips. Finally, fuel is what keeps your fire going. Good fuels are normally less

combustible than tinder or kindling, and they burn slowly and steadily once lit. Fuels that you may find in your natural surroundings could include dry wood and branches, peat, or dried animal dung.

### **Build a Fire Small to Large**

There are several ways to arrange a fire, but one of the easiest and most common ways to build a fire involves arranging the tinder below a few pieces of kindling in the shape of a tepee or upside-down cone. Think of building the fire from small to large so that you can gradually increase its heat and eventually begin adding larger fuel without snuffing out the flame. Light the tinder you've arranged below the kindling in center of the tepee formation, and as the tepee begins to burn; the kindling on the outside will fall inward to fuel the fire. Keep adding more kindling to the outside of the teepee until the fire grows in strength and temperature. Begin adding fuel in the same way until you see hot orange coals. When the fire is large enough and hot enough, you may simply add fuel directly to the fire.

There are several methods for laying a fire, each of which has advantages. The situation you find yourself in will determine which fire to use.

### **Tepee**

To make this fire, arrange the tinder 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.

### **Cross-Ditch**

To use this method, scratch a cross about 30 centimeters in size in the ground. Dig the cross 7.5 centimeters deep. Put a large wad of tinder in the middle of the cross. Build a kindling pyramid above the tinder. The shallow ditch allows air to sweep under the tinder to provide a draft.

## **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. There are several other ways to lay a fire that are quite effective. Your situation and the material available in the area may make another method more suitable.