

Wilderness Education Project

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Survival Priorities

In wilderness survival there is a basic order of things that you need in order to survive. The first priority is to have the proper attitude. The Survival Club motto refers to the proper attitude one should have:

THOSE WITH THE WILL TO SURVIVE, WILL.



The second priority is shelter. While you can go without food for quite a while, you can die from exposure just overnight. Do you need a shelter for the night? If so, don't just sit around, look. Often you may spot a rock overhang or fallen tree that will suffice. If not then maybe you should start building something.

Third in the priority list is water. Everyone needs a given amount of water each day, primarily to replace that which is lost in breathing and sweat. One or two quarts is a minimum. You probably already know that in hot weather you need more water. The same is true for cold weather as well. Because you sweat less in cold weather your body needs to get rid of the excess minerals and impurities through another means.

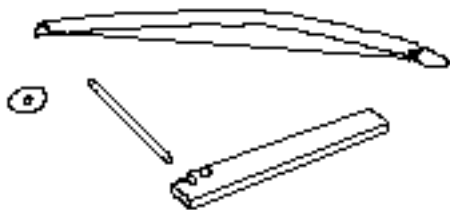
The fourth is fire. Fire can be a source of heat, a method of cooking, and a tool for shaping wooden objects. There are many ways to start fires with primitive means. Flint and steel is a common term that most people recognize. Rubbing two or more sticks together also works.

Many of you may have played with a magnifying glass as a kid.

The last priority is food. Without food over a period of time your body starts digesting the muscles for energy. The heart muscle is one of the first to weaken. When a person is said to have starved to death, it is quite commonly found that they died of heart failure.

The basic tool for survival is your brain. Creativity is needed most when you are in a survival situation. You must stay one jump ahead of nature if you want to live. Improvising will play a key part in your chances of living. Plain and simple, if you put your energy into living and focus your mind on remedying your situation you will survive.

When people start to panic, well that is when the trouble starts. When you become lost, or the camp gets lost, do something. The best thing to do is to sit down and take stock of the situation. Are you really lost? Can you hear other people or their noise? Can you see the way you came? There is a solution to any problem you might have to face. Say you find yourself good and truly lost. You have taken stock of your situation and know that no one will start worrying about you until tomorrow. Your next action should be to look at what you will need to keep you in good health until then. Never sit around and bemoan the mess you are in, leave that for people without a brain to think with.



Practice, for you are less likely to forget a skill that you use.

Debris Hut Construction

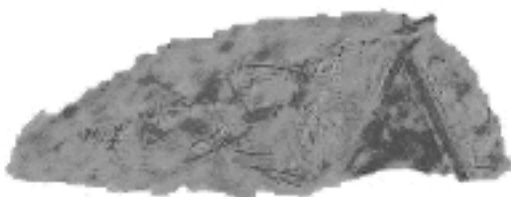
Debris huts are one of the simplest and fastest survival shelters to construct. They are one of the warmest as well. A properly built debris hut will keep you toasty warm down to well below zero. All shelters can be improved upon. If you don't have the necessary materials to make a debris hut, or a complete debris hut, look around and see what you have. You may be able to make a similar shelter from other materials. And look at the weather. If you have sun and warmth you don't need to build a rain proof shelter. A simple sun and wind shade may be all you need. Build to fit the land. Look at what the animals in the area use for shelter and try to emulate them.



Step one: Find three base sticks. The two shorter ones should reach your elbow and have a crotch on one end. The long pole or ridge pole should be one and a half times your height. Remember that the key to a proper shelter is LOCATION. Join the two shorter sticks by laying the crotches together. Insert the ridge pole between the two shorter ones.



Step two: Lay sticks against the ridge pole. Start at the top with the longest sticks. Completely fill both sides. Once the sides are filled with sticks find smaller brushy branches and cover the structure. These help hold the debris to the sides. You can make an arched branch doorway at this time if you would like. Or if you have enough branches you could create a wickiup style entry way and work area.



Step three: Cover the entire structure with debris. When you gather the debris only take the top layer so that you don't disturb the soil underneath. Instead of laying or piling the debris on, throw it on and let it settle where it will. That makes for a much more water proof shelter. The debris should be eighteen inches to two feet thick.

Water in the Wilderness

In the wilderness water is one of the most needed items. It is possible to go without water for only short periods of time. Without water the human body becomes sluggish and unable to perform even the most simple tasks. If enough time elapses dehydration can occur. Any one that plans to be in natural settings for any length of time needs to find a source of water. There are many methods available for collecting water for consumption. These methods may overlap and you may use more than one method at any given location.

The simplest method of obtaining water is in its natural form. Streams, rivers and lakes are all good sources of water. In this day and age you will be hard put to find pure water from any of the said sources. Look at the source for signs of purity. It may help to ask the following questions about it:

Is there an abundance of green and healthy plant life around the source?

Are there signs of animals using this as a water supply?

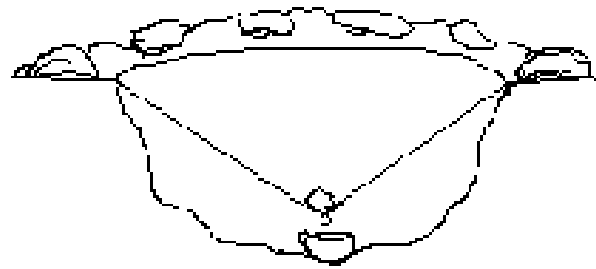
Does the water appear normal in every way?

If you answered no to any of the questions do not drink the water. Move on to another source or find a way to purify the source. Chemical impurities may not show until it is too late. Always remember to “look over the next ridge” for anything that may poison the water. If at all possible try to purify the water before using it. One of the easiest means of purification is that of Iodine or Chlorine tablets. Simply add one or two tablets to a liter of water, loosely cap and wait three minutes. After the three minutes seal and shake before flushing the threads clean. Wait ten more minutes before drinking.

Another method of both purifying and obtaining water is the solar still. A solar still is a unique device that works on the same principle as a regular still. The liquid is vaporized and collected through condensing it into a container. The main type of still consists of a three foot diameter, two foot deep hole dug into the dampest soil you can find.

In the center of the hole you should put a container for collecting the condensed water. Place a clear or translucent piece of plastic across the hole and seal the edges. In the center of the plastic set a rock heavy

enough to hold the plastic in a cone shape with about 40° sloped sides. As water is vaporized out of the soil it will condense on the plastic and run to the bottom of the cone to drip into the cup. You can make it easier to drink out of if you place a small tube in the container and run it out the side of the hole. That way you will not have to remove the plastic when you get a drink.



You can modify the solar still by adding pans of dirty water, vegetation, and even refuse to the hole. Do not use poisonous plants! If you have a plastic bag try placing clean vegetation into it with one corner lower than others so that the condensation runs into it. You need not remove the vegetation from the ground or even from the bush or tree. Just remember to keep the plastic as sealed as possible.

It is entirely possible to obtain your water from plants. Many plants are good water sources. Try chewing on a thistle stalk, minus the thorns! Grapevine provides one of the best plant sources of water in this area. Notch the vine as high up it as possible. Cut it off close to the ground. Place the end in whatever you wish to collect the water. Finish cutting through the top notch. A one-inch vine, about eight feet long, may yield up to a quart of water. It is not good to go around cutting vines though, it may kill the rest of the plant.

In the area that I live there are numerous springs and seeps to be found. Learn the vegetation that is common around water and you will find the source. Often you may have to dig before obtaining liquid water. If the water will not stay and pool in a hole you may have to resort to squeezing it out of sand or mud. In a permanent camp you may even find enough materials to make a normal still. This may be illegal to use in a non survival setting. Check your local laws.

Pyromania

Fire is not quite as important as water for survival. Many times you can live without a fire. It is interesting to note that more people in low temperature situations die from fire than from cold. Fire should never be treated as though it were a toy. It is a tool and should thus be respected. Before attempting any primitive means of fire starting you should first learn to build a proper fire. The first key to a good fire is of course the location. A good fire should be in a safe area well away from flammable materials. You may want to look for a place where nature has provided a good reflector such as a large rock or bank of earth.

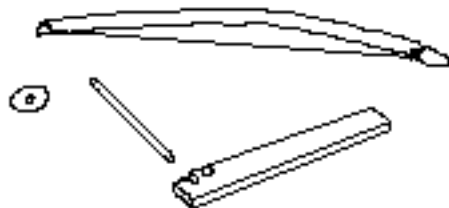
Most fires benefit from being build in a small bowl shaped depression. This lets the embers roll towards the center and helps keep the fire going. If the ground is damp you may want a small flat rock or piece of bark in the bottom to hold the fire off of the ground just slightly. Tinder is the first part of making a fire. It should be light and fluffy. Down from plants, mosses, and thin shavings make good tinder. The tinder should burn by itself. The tinder is made into a ball much like a mouse nest.

The tinder is placed in the fire pit and surrounded by a pyramid of kindling. The kindling is any stick from pencil lead to pencil in diameter. Leave plenty of room for oxygen to enter, you don't want the fire to smother or smoke. Have lots of "squaw" wood on hand before lighting the fire. That is any wood that you can make into fire sized pieces. There are many fire designs that you can experiment with at your leisure. I prefer the tipi and log cabin styles.

Fire by friction is also known as rubbing two sticks together. There are many methods, some work better than others. Bow drill is the easiest to learn. A bow drill set consists of a fire-board, a spindle, a hand socket, and a loosely strung, non flexing, bow. The fire-board is about three inches wide, 3/4 inches thick and a foot long. The spindle should be a little less than one inch in diameter and about nine inches long. The hand socket should comfortably fit in your hand. For a bow I use a thirty-inch long section of slightly curved branch.

Place the spindle in the bowstring with a twist. The spindle should want to snap out of the string. Place the lower end of the spindle into a small hole made in the fire-board that is held under your foot. Place the hand hold on top and bear down with a little weight. Spin the spindle by pushing and pulling the bow. Keep spinning and pressing until you see smoke begin to pour from the spindle. Stop at this point to cut the notch and grease the hand-socket. Place some tinder into a shallow depression under the fire-board. Spin and press to get some good smoke. When the smoke pours forth in clouds stop and knock the coal into the tinder.

The mouth drill is a similar apparatus in that it has a spindle and fire-board. The mouth part comes from a mouth socket that you hold with your molars. Bearing down with your head you spin the spindle with your hands.



Good for the Eating

There are countless things that you could eat out in nature, but not all of them are good for you. Learning what is edible can save you from really bad stomachaches or worse. Some of the plants that provide the better foods may make you sick unless they are prepared properly. A good example is the acorn. Full of tannic acid, acorns are not only very bitter when raw, but they can be lethal. To be able to eat them you must first leach out the tannic acid.



Among those that know the edible plants we have what we refer to as the “Big Four”. The first of these is the **Oak**. Most everyone knows what an oak tree looks like and what the seeds or acorns are. These acorns were one of the staples of life to the Indians of California. Acorns, when prepared properly to rid them of their content of tannic acid, are very high in proteins, starches and fat. If a person in a survival situation could have but one food, acorns would be one of the best possible to have.

The second plant is what we all know as **Cattail**. This marsh plant is found almost anywhere that there is water. The cattail is sometimes called the supermarket of the wilderness. The roots can be dug up and eaten raw or cooked in numerous ways. The root can also be dried and ground into flour. Pollen from the cattail can be added to flour or used to thicken a stew. The young flowers, while still in their sheath of leaves may be picked and cooked like small ears of corn.

Third in the big four are grasses. The **Grass** family contains so many varieties that they have not all been counted. Suffice it to say that some member of the grass family grows almost everywhere on earth. All members of the grass family produce some edible portion. The soft shoots can be eaten raw. The older stems can be chewed for the nutritious juices that they contain. In many oriental countries the soft shoots of the bamboo, the largest grass, is a costly delicacy. The seeds from most grasses may be eaten. Some of the seeds that you may already know include barley, oats and wheat. Be careful if you collect the seeds that none of them have a purplish or black fungus on them. This fungus, ergot, has been used by primitive societies as a abortative agent.

Last but definitely not least it the common and not so common **Pine**. Many of you may have tried pine nuts at some time. The nuts, found between the scales in most pine cones, are very tasty and high in protein. The pines with the larger cones produce the harvestable nuts. If you do harvest the cones while they are still green, cut the center core into sections and eat the soft sugary inside. Pine needles may be chopped fine and used to make a tea or added for flavoring to many stews. The inner bark of the pine may be harvested and eaten raw or cut into strips and dried to use later as noodles. They are very starchy most of the year. Young shoots can be added to salads and the pollen collected as a stew thickener or flour additive.

The best book combination that I have found is a Peterson's Field Guide to Flowers and a Tom Brown's Field Guide to Wilderness Survival.



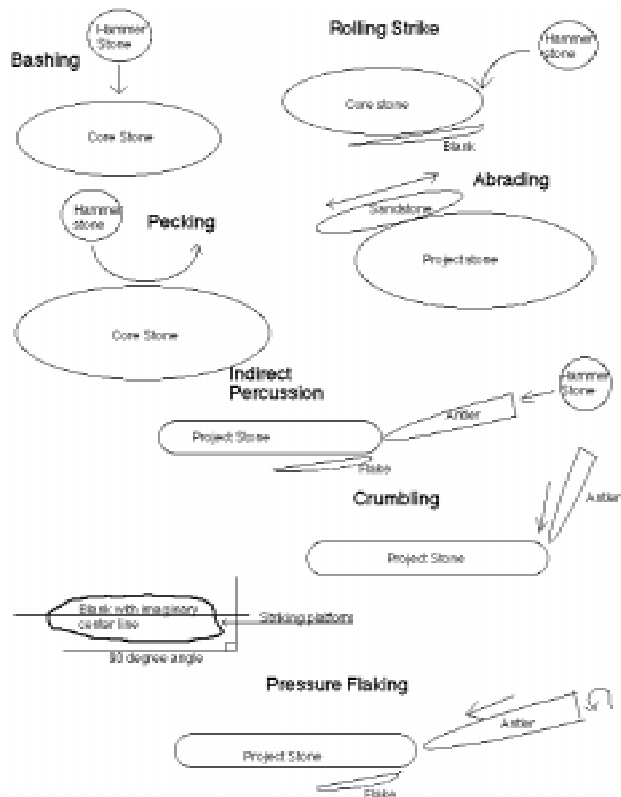
Primitive Tools Making

For many years modern man has had a fascination with the amazing ability of native people ability to create tools from stones. The largest tools made from stone are the metate and mortars used for grinding food items. The metate is basically a flat stone that the food to be ground was placed on. A smaller rock was held in the hands and forced over the food, crushing and grinding it. The mortar was more useful to the California Indians as they ate more nuts than grains. The mortar is a bowl shaped depression in rock. After placing the food that needed grinding into the mortar the pestle, a long fist diameter rock, was pounded down into the hole to grind the food. Metate and mortars were made from many types of rock, but open cell basalt was the most common. Pecking is a method of rock shaping that can be used in medium grain stone such and basalt and granite.

Warning: You should wear safety glasses or goggles anytime you are working with any stone!

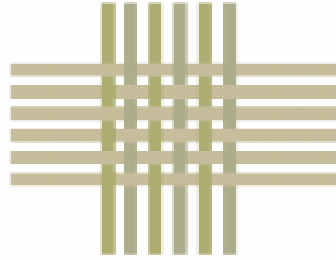
By using a skipping strike with a second rock it is possible to remove grains of rock. The Indians used this method to notch flat or round rocks so that they could be hafted (attached to a handle), enabling them to make hammers and axes. Perhaps the most incredible feat in stone working is creating knives and other edged tools from microcrystalline or glassy quartz. The types of rock used included flint, chert, chalcedony, jasper, opalized wood and obsidian. The easiest method for obtaining a sharp edge from one of these rocks is called the cave man strike, or bashing. The process is simple, pick up two rocks and strike them together. In a survival situation this strike may provide you with a lifesaving cutting tool. The rolling strike works best near the edge of the rock on a striking platform that has less than a 90 degree angle to it. When working with the rock, imagine a center line creating a plane through the largest angle of the stone. By always striking below the centerline and only on a proper striking surface you can avoid fracturing the rock in unwanted ways. Proper strikes also eliminate hinges, flakes that break near the center of the blank. A useful tool for determining if a spot is a good striking platform is a simple square made from wood or cardboard. Place the square against the stone and note if the stone has an angle of less than 90 degrees. If it does, and the site is below the center line, try a strike. As unlikely as it may seem sanding or abrading does play a part in the making of stone tools. The razor sharp edges on many cutting tools would easily crumble and disintegrate if they were not smoothed with a sanding stone before working the surface. Sandstone and some igneous rocks will work as sanders. Another way to prevent the edge from crumbling in a way not suited to the work you are trying to accomplish is to break or crumble the edge. Simply place the tip of the antler tool along the edge of the blank and press down. Use a leather palm pad to help protect your hand from bad cuts.

Indirect percussion works off another idea, that by holding a "chisel" of antler against the blank and then striking it with a hammer stone you have better control of the direction the force is applied. The hardest and most time consuming of the shaping process is called pressure flaking. The way to properly flake the stone with pressure is most easily taught by trial and error. Traditionalists will insist on using antler or bone tools. Use the square and centerline method to find where to press on the stone. Place the tip of the antler against the stone and apply a twisting push towards the other edge of the stone.



Woven Items and Containers

- Perhaps one of the most useful skills to someone living in the wilderness is that of weaving. There are countless items that can be made by using some of even the simplest techniques. The techniques range from the simplest, known as over and under, to the mad weave which is taught in Philippine women's prisons as a punishment. But you don't need to learn that one, although it really isn't all that bad once you learn it.



The basic weave, over and under, is exactly like it sounds. Multiple strands of just about any material are woven together by passing the strands over and under those they cross. The thatching used on some houses in the South Pacific as roofing is often woven in this manner.

By forming a base of over and under weaving you can easily start a basket. Simply turn up all the ends to form sides and weave around the sides with longer strips of the material you are using. You can also use twining to form the sides once they are turned up.

- Start with a long strip of material and double it around one of the verticals. Then give it half a twist and pass one end on each side of the next vertical. Continue winding around the sides giving a half twist or more to the weavers between each vertical.

Coil baskets are some of the strongest in the world. A coil basket is very simple to make. Start by making an overhand knot in the end of a bundle of material. Then using a sewing stitch with a flexible strand to start whipping around the knot. As you go around start coiling the remainder and sewing it to the knot. Continue with the coil, sewing the new material to the previous row of material until you are ready to start up the sides. Pulling a little tighter on the new material will start the vertical direction of the spiral. Continue up as far as you want and finish off by tapering off the material and adding a few extra stitches.

Basket making is best taught through trial and error so if you don't end up with anything useful the first time don't be afraid to try again or even pull what you have created apart and start over.



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