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### The bow drill revisited new tips for old skill

Although the hand drill is the most universal friction fire method in the world, the bow drill is probably the most dependable. It is certainly the most widely used today by wilderness skills practitioners. It is so basic to the study of primitive skills that it forms the core of any book on the subject, right next to the lean-to. A student of the bow drill will grow in several areas of the study other than fire making.

A search for the correct materials will lead to the knowledge of countless trees, shrubs, and plants. Also these materials have to be followed through all of the seasons to find the correct state of degradation. This learning will go way past mere identification, for the bow drill requires different qualities in every part of the set to make it work properly. The student finds what woods are hard or soft, oily or crumbly, and how each degrades according to where it sits in the landscape. The art of cordage making can be learned, tried, and tested fully by practicing the skill.

Also children and beginners can learn the basics of knifework, or even stone tools, by constructing the various parts of the set. Finally, the confidence to skill gives to someone in the woods cannot be overstated. I clearly remember the moment when I first blew that smoking ember into a flame. I felt as though I had transformed from a tenderfoot to a native in one magical moment.

So much has been written already about the bow drill in several books and primitive technology manuals, and each author I have read has given me at least one great tip. Sometimes these tips are crucial to success, and at the very least they can save years of frustration. The goal of this article is to put all of the lessons I have picked up about the bow drill from the various natives I've had the pleasure of working with, the authors, demos, and my own 25+ years of experience of trial and error into one place to expedite things for my students. To start, selection of the materials is crucial. Choose words listed at the end of this article to find new ones using the guidelines given. I know there are dozens more to add to this list and I can't wait to try them. Just be sure to click standing wood that is dead but not rotten. Touching to your cheek is a good way to see if it is dry. Even after a rain you can carve down to the dry layers if it is a branch collected off the ground. The general guidelines for the friction parts of the bow drill (spindle and hearth-board) are to collect dry medium softwoods and avoid hard or oily woods. **(See list)** use the same word for the drill and hearth if you can, but try to use with equal hardness. Pithy drills are excellent, but you might need a solid hearth board. The combinations are endless and you can never finish testing them. Following the subtle tips here can save years of frustration. A 3 inch or so diameter stick will work great when split or carved flat.



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Spindles, or drills, can be split from the larger Hearth-board or you can just use a small diameter stick from the same branch. A diameter about the size of your thumb is ideal, pithy woods such as sumac and Ailanthus are excellent choices for drills however some of these materials may not be available in your area if you are located in the northern hemisphere you should consider using materials like Cottonwood, Alder, poplar, Willow, Red Maple, etc. for your spindle. These are all excellent choices for drills as a hard exterior produces friction in the inner path practically explodes into an ember. My

fastest ember with the bow drill was timed at 4 seconds with an Cedar drill and a Cedar hearth-board. A small bow in a tight string can twirl the drill into the hearth-board with enough friction to heat the wood dust into an ember, which collects into the notch. The bow can be made of any wood, and should be about the length of the arm of the user and slightly curved. I once failed to get a fire going over and over again in front of a film crew years ago. My string kept breaking or loosening causing my spindle to go flying. A very slight tilt to the Bow solved the problem and of course I learned of this immediately after the event. If you hold the bow horizontal when running the spindle the string tends to rub against itself making it weak and causing it to break by placing the both slightly at an angle it separates the wraps that are around the spindle. It turns out that the characteristics that exclude woods from being good hearths and spindles are what you are looking for in a handhold/bearing block. The handhold/bearing block will control the downward pressure needed to produce an ember. Any friction here will slow down the speed of your drilling and can bring the whole process to a halt. Now back to the spindle one key to making the right spindle is where the handhold/bearing block is placed be sure that in the spindle is carved down to somewhat of a point however not a sharp point by doing this it will reduce the friction between the spindle and the handhold/bearing block. On the other end of the spindle the part that grinds against the hearth-board should be slightly rounded around the edges and resemble somewhat of the tip of handle on a broom where the spindle meets the hearth-board is ideal to have good surface area to produce the friction needed to create the ember. The ideal handholds/bearing blocks are as follows: hardwoods in resinous woods are great here, Osage, black locus, and pine knots are great in any wood can be used if greased up in the depression. I rubbed the top of the drill on my four head to get the oils and wood. Various bones and rocks can be found without any modification that will fit the need.

Before going for a fire, the depression has to be buried into the hearth-board. Only then can you properly place the notch that creates the coal. start by standing over the hearth-board with the left foot on the left side of the board twist the drill into the bowstring. After digging into little about a (1/4 of an inch) with your knife, placed the drill in the depression and practice moving the bow back and forth with a little downward pressure from the handhold/bearing block. The left wrist should be locked against your left shin so that there is no wobbling in your form.



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The correct form you will find will be comfortable being comfortable is also a key to generating a successful fire using the Bow drill method after several strokes you'll know if you set up is working properly. If it is, the business and will start smoking and you can stop when you have a defined circle about a quarter of an inch from the side of the board. Now you can carve the notch out to the center of the circle. It is a good idea to cut the notch on the side of the board closest to you. Then you can see when smoke is coming from the inside of the notch, and not just the bottom of the drill. This is a good sign that you have a red-hot coal.

A tender bundle is needed to bring that coal/ember to a full flame. Buffed up Bark and plant fibers are best when they are pulled to the thinnest diameter fibers by doing this you create a lot of surface area for the ember to be blown into a flame. A classic example is to rub a cedar tree with the side of your knife until you have a handful of fluffy bark fibers. Many trees and plants work great as long as they are not still green. If your choice of materials does not break up very fine, you can just add some downy plant material such as found cattail or milkweed pods. Just use about one third of the bundle to help it get started. Many indigenous and natives have methods of their own when it comes to making the ember in transporting it to the tender bundle some drop the ember onto a leaf or flat smooth rock or even a piece of bark. But I prefer to have the ember drop right into the tinder bundle. Another trick to making more friction on the hearth-board is to place a little bit of sand into the burned in a hole on the Hearth.

I have attached some pictures of a bow drill I made to give you an idea of the correct way to use it along with a picture of myself in the proper form because like I said being comfortable is one of the main keys to making a successful bow drill fire.

*"We do have pre-made bow drill sets we sell online on our website these are great to use for practicing and gives you an idea of what to look for and gives you an opportunity to test different types of wood and materials that is included in the kit."*

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