

How to Build a Knife

by **Basta** on March 5, 2008

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Intro: How to Build a Knife

So you want to make a knife?

I'm not here to dissuade you (rather, I'd like to encourage you), but let me first get this out of the way: knife making is a slow, delicate, painstaking, multi-faceted, sometimes frustrating process. It requires skill in metalworking, woodworking and design, patience, attention, and general levelheadedness. You have to take your time if you want to do things right, otherwise your experience will be sub-optimal. Even I have trouble with this sometimes, as this project will, itself, show you, and some of my past projects will blatantly scream...*wink.* Don't be frustrated if your first project doesn't come out the way you want it. All good things take practice, and you may make several knives--or several dozen--before you make one you really, truly have no beefs about. But it's good fun, too. You can do it. Don't worry.

Okay, so you still want to make a knife. Read on.



Image Notes

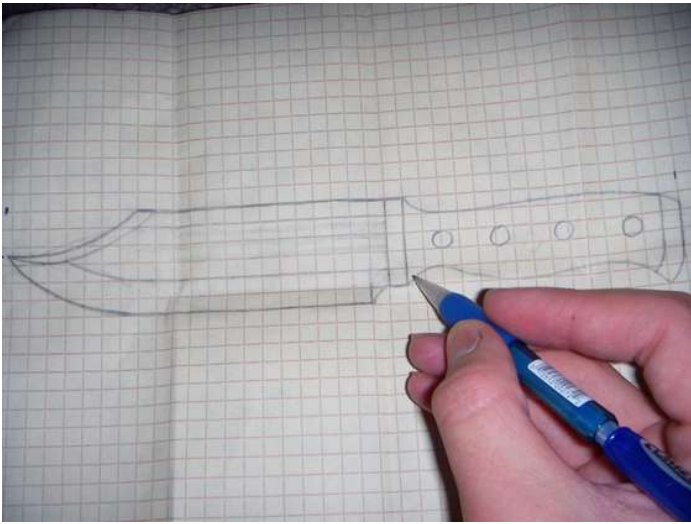
1. I took this picture in the woods beside my house. Looks nice, huh?

step 1: First thing's first...design the blade!

The design of your knife is the single most important element of its construction. In my designs I try to find the best compromise between functionality and looks. I abhor inefficient fantasy designs and have a profound dislike of Persian-style blades--you know, the kind shaped like a banana--but if you like a specific design, go for it.

First, plot out the blade and handle shape on graph paper. Try to get it as close to actual-size as you can. The less changing you have to do to the design once it's on the steel, the better.

Now you need to decide how to attach the handle to the blade. There are three common methods of doing this: a full tang, a partial tang, or a through-tang. A full tang has the same profile as the handle of the knife, and the meat of the handle is formed by two slabs of wood (scales) to either side of the tang; most good knives are made this way. The knife I'm making here is a full tang knife. A partial tang is the most inconspicuous of the three and, in my view, the hardest to make. In this design the tang is a rod that protrudes back from the blade and is completely hidden inside the handle, secured with a rivet or two. Japanese swords and sushi knives are made this way, though the latter is secured with a cuff rather than rivets. A through-tang knife is similar to the partial tang except that the tang extends all the way through the handle to be secured by a nut or by peening on the other end. Ka-bars and most turned-handled knives are made this way. Choose whatever best suits your project. There is plenty of info on the web if you're not going to make a full-tang knife, though I recommend it for a first project.



step 2: Ingredients: choosing and finding materials for your knife

Next: choosing and obtaining materials. You'll want a carbon steel (NOT stainless), such as 01, which I used for this knife. There are other steels out there, but 01 is good to start with. You don't want stainless steel because it has to be sub-zero tempered, which is bad. It also doesn't make as fine a blade. You'll want a slab or bar about 1/8 to 1/4 of an inch. I believe my steel was 3/16. You'll also need handle material, such as wood, micarta, bone, leather, cord, stone, gem, another type of metal, mammoth ivory, or meteorite. Believe me, they've all been done. For my project I decided to use Purpleheart wood. It's my favorite type because it's unique, beautiful, tough, and above all, cheap. You'll also need pins or rivets and epoxy to attach the handle. I used a brass rod for my pins.

The first picture is me with my chosen slab of steel. Notice the missing sock--this is vital to the success of the project ;-). I got it from a Northern Tool Supply, an industrial metal and tool supply warehouse a few miles from me. Finding steel was one of the most difficult parts of this project for me, because I live in a pretty rural (Maine is pretty much all rural) area and there's not a whole lot around. You can salvage steel from saw blades and the leaf springs from cars if you can't find a commercial dealer, but chances are you can.

The second picture is of the Purpleheart wood, which I got at Atlantic Hardwoods, a flooring and marine hardwood supplier in Portland. Again, there's probably something near you, just try the yellow pages or the internet.

After you have the steel, trace your design onto it in permanent marker. You'll notice that my tracing is a little bit bigger than my design--I had to elongate the handle to fit my hand, and the blade just didn't look good unless it was a good inch longer than the grip. Now you're ready for the next step.

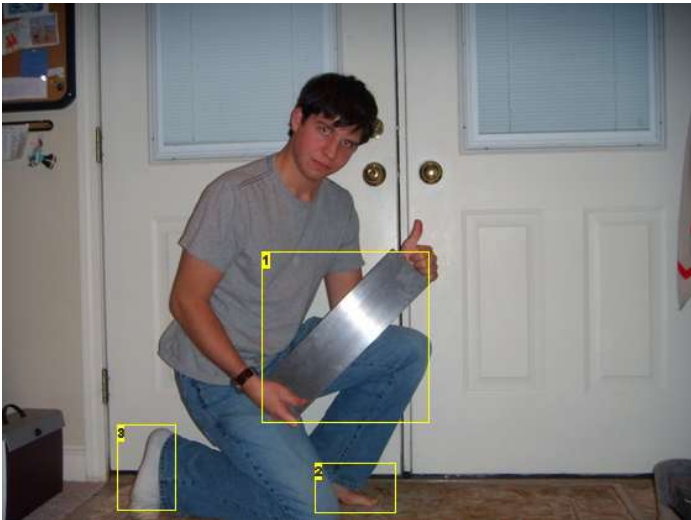


Image Notes

1. 01 carbon tool steel. A great choice for beginning or established knife makers.
2. No sock
3. Sock



Image Notes

1. Purpleheart wood. I use it in most of my projects to varying degrees. Careful, though, because it splinters and has a pretty bad blunting effect on tools.

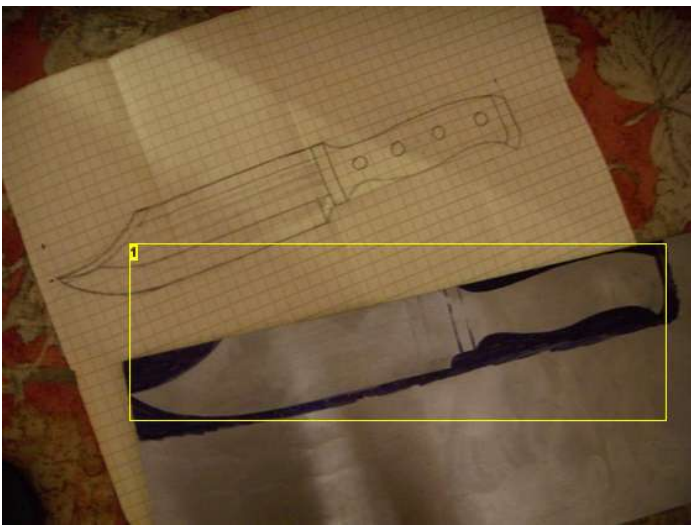


Image Notes

1. The blade design transferred directly to the steel. The knife will be ground out from this outline.

step 3: Rough cutting the blade--the easy part

Now it's time for the really fun part. Here's what you're going to need:

- A hacksaw or jeweler's saw and several blades
- An angle grinder with a hard wheel and flap wheel
- Files (if necessary)
- A drill
- A vise
- Necessary protection (glasses, gloves, jacket if you don't like sparks)
- And a steady hand

Step one: cut out your blade using a hacksaw or jeweler's saw. If you're using a thick piece of steel, go with the stiffer hacksaw. I recommend standard, medium-to-fine blades. If you're using a relatively thin piece of metal and you have a jeweler's saw, you can cut out a pretty close profile which will save you some grinding in the next step. I just cut out a rectangle around my basic shape--using a hard, steel-cutting wheel, you should be able to grind through the excess pretty quickly. See picture one, below.

Step two: slap that blank in a vise and start grinding. Use the hard wheel on your angle grinder to cut away excess metal from the profile of the blade. This should be pretty self-explanatory; you're just cutting out a shape. The different colors that appear along the edge are just products of low-level heat changes in the steel, and won't compromise its strength or finished look. Remember those colors, though, you'll be using them to your advantage later when you heat-treat the knife. See picture two below for an action shot, and three for the completely cut-out blade.

Step three: grinding the edge. Use the flap wheel (the one with flaps of coarse sandpaper) to gently and EVENLY grind a slope to the middle of the steel. Don't go past the center, because that will give your edge a dip--and you don't want that. Picture four is of the job at this step, half done. Grind the other edge the same way, until the edge becomes an edge. If you think you're starting to go too far, STOP! Be patient. This is possibly the most delicate step in rough-shaping the blade. Work the edge evenly, so that it's straight and consistent. See below, picture five, for the finished shape.

Step four: drill rivet holes. Make sure you use a drill bit the same diameter as the rod or rivet you plan to use. They can go anywhere and be any number, so get creative. Sorry, I don't have a picture of this...if you can't figure it out, try making something simpler, like a birdhouse.

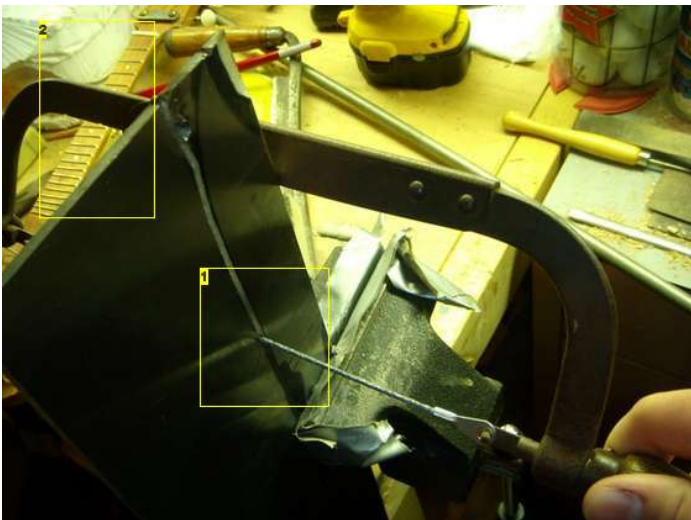


Image Notes

1. I used a round diamond blade for the first section of this cutting, which I don't



Image Notes

1. Usually you hold these things with both hands, but I was taking a picture.

recommend. It took me a couple episodes of South Park (a good measure of time for on-and-off work, with the TV playing in the other room) to get this far. I later reverted to regular hacksaw blades.

2. This thing up here is an electric mandolin. Maybe that'll be in another Instructable.

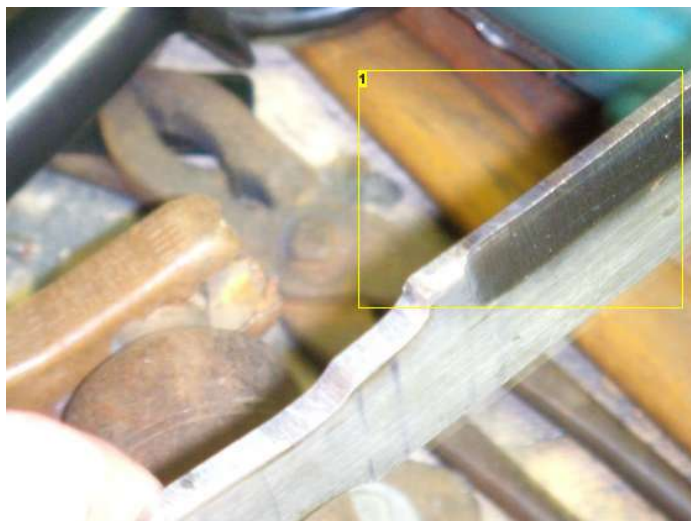


Image Notes

1. Half the edge after it's been cut. Don't go too far!



Image Notes

1. Nice shape, but it needs some finishing.

step 4: Finishing the blade (first time, no joke)

Before heat-treating the blade you'll need to finish it. Of course it's fitting that after the most fun part of the process, you need to endure the least fun part. Nevertheless, it's important. Why? To ensure you put out a quality product, of course. I also decided to add some simple filework to my blade during this step. To finish the blade, you'll need:

Sandpaper, grits ranging from 60 to 220. I use a sanding wheel and power drill to save time.

A sanding block, even if you're also using a sanding wheel.

Time. Lots and lots of time.

This step is fairly self-explanatory. The first picture below is early in the process, sanding with a rigid sanding wheel. These things aren't necessary, but I do recommend them for rough finishing. I saw 'em at the hardware store and thought I'd give them a spin. Ha-ha, I made a pun.

Work through through the successively finer grits until you reach about 220 grit. There's definitely a technique here--first of all, don't skimp. You'll regret scratches you don't take the time to remove during this step. Always work each successive grit perpendicular to the direction you worked the one before; so if you sand the blade lengthwise with one grit, sand across the blade for the next grit. Also, be sure to cover all the visible surfaces of the blade. Give special attention to the ricasso (the area where the blade meets the handle) and the spine/handle edges of the knife. It's better to sand part of the blade that will be covered than to leave a visible part of it unfinished. I'm sorry I don't have more pictures of this bit, but it's boring and I guess I forgot to take them.

Now, for that filework. You can see the process in the last three pictures below. First, choose your design and mark out even spaces on the part of the blade to be worked. Second, draw the pattern on the knife, using the marks as guides. I chose a pretty simple zig-zag pattern, but you can see a couple other possibilities on picture three. There are literally infinite possibilities for filework, but I'd try a very simple one on a first project. Bad filework can ruin an otherwise good knife. In the last picture <http://www.instructables.com/id/How-to-Build-a-Knife/>

you can see how I filed out the pattern. Use needle files. It's pretty simple; just be careful not to scratch the side of the blade. I did in one or two places, but later sanded the scratches out.

Once you've finished sanding and you've done any other ornamentation, you're ready for the next step: heat treating.

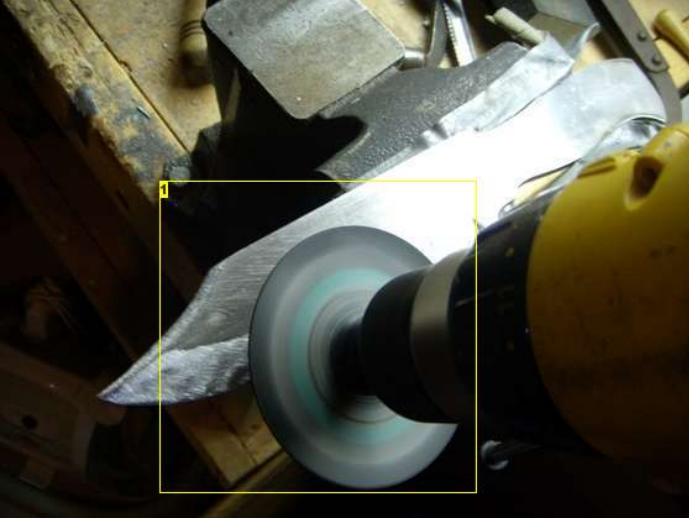


Image Notes

1. Take it a step at a time. Finishing the blade is a long journey, but you'll get there.



Image Notes

1. Marking lines for filework, every quarter inch.

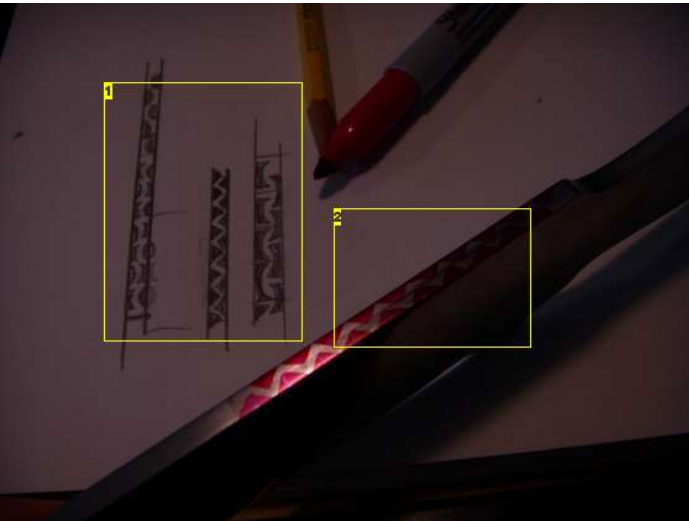


Image Notes

1. There are lots of possible file designs, here are a few.
2. And here's the one that I chose.

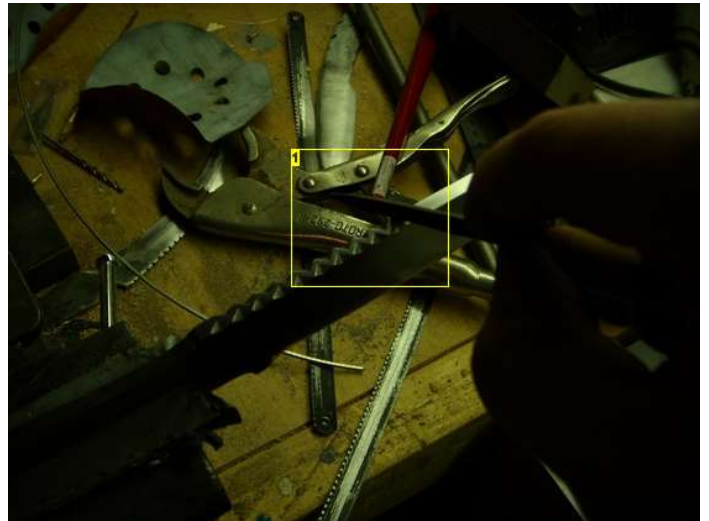


Image Notes

1. Use a small file for this part, and go slow.

step 5: Heat Treating--for the little pyro in all of us

Here's probably the most technical part of the entire project--heat-treating the blade. You can use either a coal forge (as I did), a gas forge, or a torch. The last should only be used on small knives--maintaining high heat on a big blade would be hard with just a torch. See picture one below to see me starting the fire.

Heat-treating consists of two steps, hardening and tempering. In hardening, you heat the blade to a critical temperature and then quench it. This changes the structure of the steel so it's extremely hard but also pretty brittle. A knife in this stage, if dropped, can crack or shatter like glass. The next step, tempering, is done by heating the knife to a lower temperature, around four hundred degrees. This makes the knife less brittle, while still keeping a relative amount of strength.

Now, You'll need a hardening bath. For O1 steel, you should use oil. Different types of steel require different methods of quenching--oil quench, water quench, air quench, etc... again, I recommend O1 steel because it's easy to heat treat and doesn't require anything more complicated than a bucket of motor oil. See picture two. You should be able to immerse the blade completely. The second thing you'll need for hardening is a magnet. This will help you determine the hardening temperature, because at that point the steel becomes non-magnetic. See picture three--I keep the magnet on the hood of my forge, specifically for this purpose.

Now to start. Make a fire on your coal or gas forge or light up your torch--heat the blade by the spine, so as not to burn off the edge. Steel will burn off or melt into an unusable foam-like metal mousse if it's heated too high.

So, you're going to heat the metal to a medium-high orange heat, until the steel becomes non-magnetic. Just tap it against the magnet while it's glowing, and if it doesn't stick, it's ready. At this point you'll want to let the steel cool slowly in the open air, a couple times. This is called annealing, and relieves stresses in the steel cause by the rolling and milling process. After you've annealed (three times is a good round number), heat it to the same temperature you have been, but instead of annealing it, plunge it into the oil bath. Wear gloves because there's going to be some fire here. See picture eight. When you take the knife out it'll be smoking and the entire room should smell like the French fry tent at the county fair. To test the edge, run a sharp file over it. If it's hard, the file should skitter over the edge without making a mark, as

in picture ten. You've hardened the blade at this point, so be careful. It'll break if you drop it.

Now, there's not much you can do with the blade until you temper it. Put out your fire, go inside, and preheat the oven. Your steel might have come with tempering information on it. If it did, chose your hardness from the sheet and use that temperature. You'll want a medium hardness for a knife. The eleventh picture of this step is an illustration of the tempering colors--these are a visual aids for measuring the temper of the blade. The higher the temperature, the softer and springier the blade will be. Try to shoot for a brown or purplish color, which will usually show up at about 400-450 degrees. If you don't know exactly what temperature to use, go for 425 degrees fahrenheit. Put the blade on the middle rack and let it cook for one hour. When the hour's up, the knife is ready. Congratulations. You've officially made a blade--though to turn the blade into a fine piece of cutlery, you'll need to do a little more work.

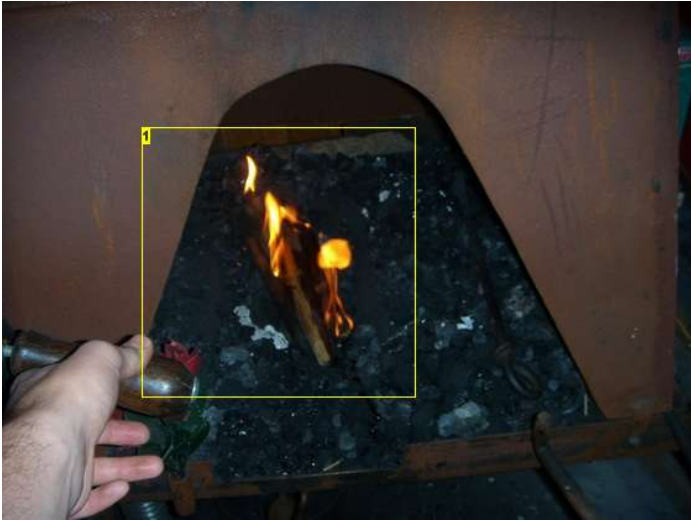


Image Notes

1. Starting the forge fire. It's always good to use the old method--tinder and kindling. I use the kindling, but replace the tinder with camp fuel. Makes things go faster.



Image Notes

1. Oil you'll need for hardening the blade. The weight and quality doesn't matter, so go for cheap.
2. The hardening bath. Fill it so that it covers the blade completely.

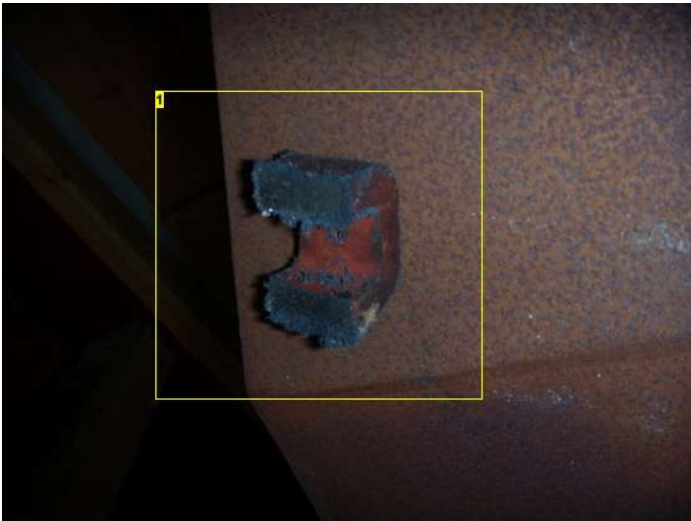


Image Notes

1. A magnet. You'll need this to judge when the blade is ready for annealing and quenching.



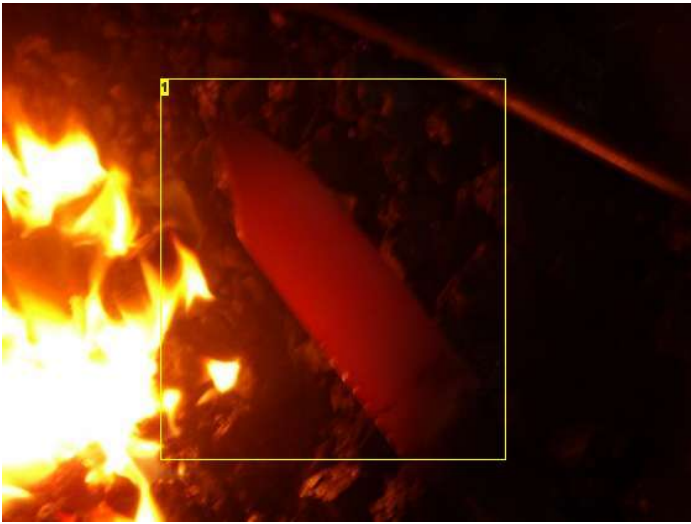


Image Notes

1. The blade about half-way to hardening heat.

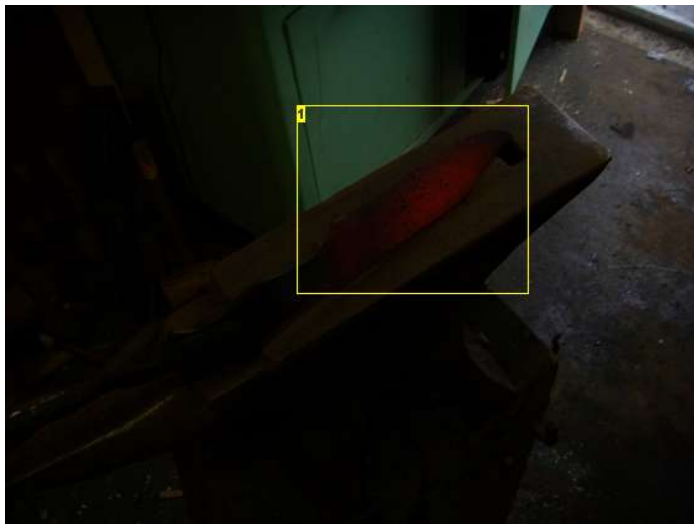
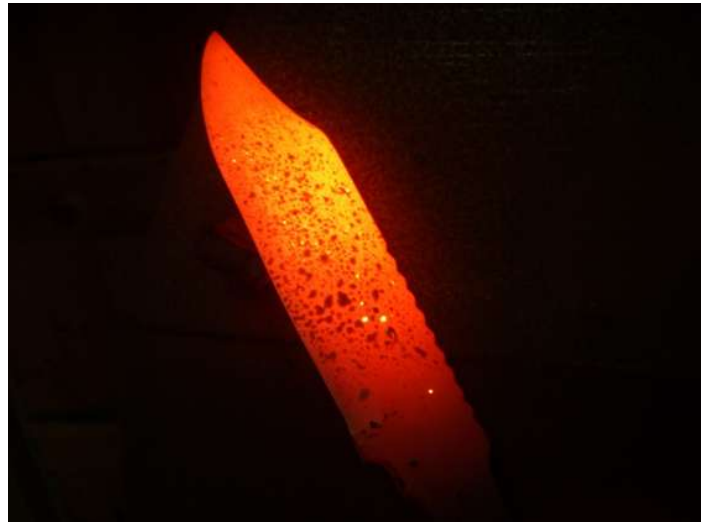


Image Notes

1. Annealing the blade. This relieves stress in the metal's crystalline structure.

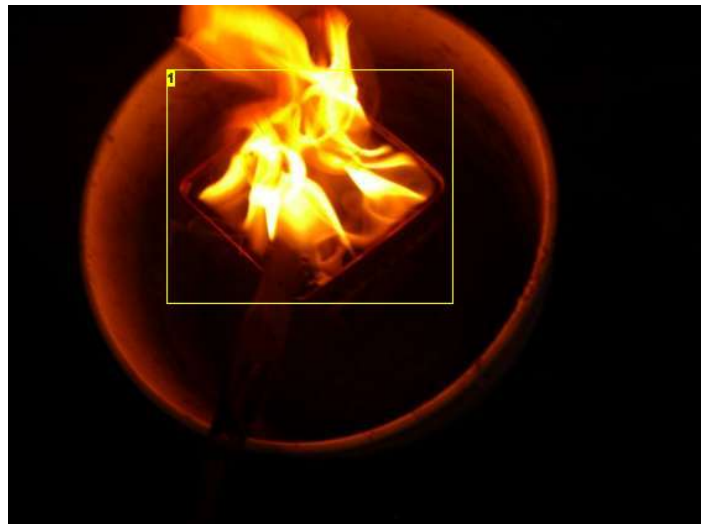


Image Notes

1. Oil quenching. Wee, fun.



Image Notes

1. Looks bad, smells great!



Image Notes

1. The file test.



Image Notes

1. The tempering colors. Light blue is softest, going through dark blue, purple, brown, amber and straw, which is the hardest. You'll be going for the middle road.



Image Notes

1. Tempering heat. Make sure you wipe all the oil off the blade before tempering, or else somebody's likely to get mad at you.



Image Notes

1. The knife goes in for one hour. After that it's officially a real blade.

step 6: Finishing the second time: son of a...

So you've finished heat-treating the blade, and you may have noticed some inconsistencies on the blade--namely, tarnishing, and if you're lucky, scale! Scale is that flaky stuff that formed on the blade when you quenched it during hardening. Lucky for us, though, it isn't flaky enough to just flake off. You'll need to repeat the same finishing process you did earlier, though this time you'll be going to a somewhat higher grit. You already know how to finish the blade, so get to work. Take your time, and be sure to get the scale this time--that stuff is pretty tricky. Go past 220 grit and continue until you reach about 350 or 400. At this point, you're ready to polish the blade. The polishing isn't strictly necessary, but I did it because I could and it also looks really nice. You'll need a bench grinder, a heavy polishing wheel and at least the black polishing compound (emery stick).

Attach the wheel to the grinder. If you're lucky you'll have an actual polishing grinder--the kind with a tapered screw to hold the wheel. If you're like me you'll have to take your normal grinder and make a spacer out of duct tape to keep the wheel tight. Either way, the polishing is about as self-explanatory as the finishing. One thing to remember is NEVER to contact the wheel with the edge of the knife in a way that will make the edge catch. This is bad and I'm not responsible for injuries incurred should you be this careless. When you have to polish the spine side of the blade, hold the cutting edge angled well away from the wheel. Be sure to get the spine and handle edges of the blade as well. When you're happy with the finish, you can proceed to the final step--making the handle.

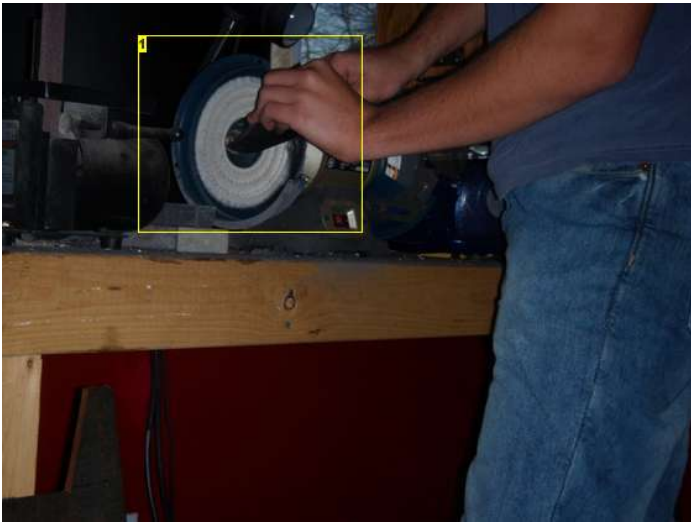


Image Notes

1. Sorry, this is the only picture I have of this step. Here I'm polishing the blade. Don't be too worried about your fingers--the wheel will only hurt you if you press it into very hard. Be more careful with loose hair and clothing.

step 7: Getting a grip

Here's the last leg of the race, the run from third to home. Hopefully by now you've chosen your handle material--I'll be using wood and securing it with brass rivets and epoxy.

First, cut your handle slabs. Of course, if you're making a partial tang or through-tang knife this part will be a little different. With a through-tang, you'll most likely be drilling a hole through the handle lengthwise. With a partial-tang you'll also be cutting a channel in each one and gluing them back together. Find info elsewhere on the web if you're doing this--it's out there. My project is full tang, so it'll have two slabs on either side of the tang. Use a table saw or a chop saw if you have one. A hand saw will also do, but you'll have to plane the side of the wood that contacts the tang if it's rough-cut.

First, file down and sand the end of the wood in the ricasso area. Once it's glued you won't be able to shape it any further. Do this by placing both pieces of wood back-to-back in a vise and filing them at the same time, as in picture four. This will ensure that both pieces are even. The rest of the handle doesn't have to be cut to shape--in fact, it shouldn't be as this leaves more room for error.

When you're ready, mix your epoxy and spread it on the back of one of the slabs. Lay one of the slabs onto the handle, as close to where you want the handle to be as you can get (picture five). Try not to get too much epoxy on the blade--it can be removed, but if there's a lot of it you'll be in trouble. Put the blade and slab in a padded vise until the epoxy has set enough to be rubbery and not wet--now, carefully, drill through the holes in the blade and through the wood using the same diameter bit you used to drill the handle. Repeat the process with the other slab--attaching it to the remaining side of the handle, putting it in the vise (picture six), and then drilling back through the holes you just drilled to complete the rivet holes. Wiggle the drill in each hole to leave just enough space to peen the rivet.

Scrape any epoxy off the blade with a Brillo pad and, for stuff close to the handle, a razor blade. Be careful with the razor, though, because it can scratch the blade and do other considerably more invasive things to you. Now, put the handle back in the vise and let it dry overnight. At this point you should tape the entire surface of the blade, to prevent scratches

When the epoxy is dry use a jig saw and/or a SurForm file to cut the wood down to the handle. Use a finer file to refine the handle until it's in its final shape. At this point, put your rivet rods in the holes, cut them so that they're about an eighth of an inch above the wood, and peen the ends down with a small ball-peen hammer. See picture eight for how this should look. Once all the rivets are peened, file them down and sand the grip up to about 150 grit. By now it should look like a knife. Just a couple more steps and it'll be done.

Using the tripoli brown compound and a NEW polishing wheel (I.E. you'll have one wheel devoted entirely to the brown compound), buff the wood grip. This should be easy--just a couple passes over the wheel and the wood will be brought up to a nice semi-luster. Take the tape off the blade, and you're ready for the FINAL step, sharpening.

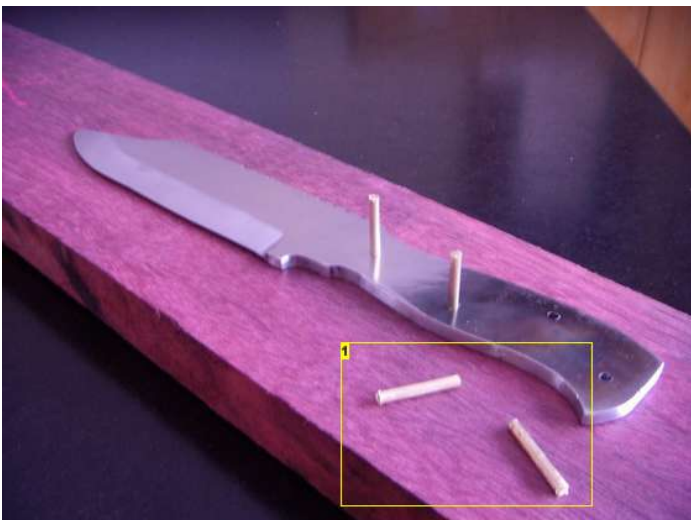


Image Notes

1. The brass pins I'm using to fasten the handle to the blade.



Image Notes

1. cutting the slabs. I'm going to have a lot of excess!

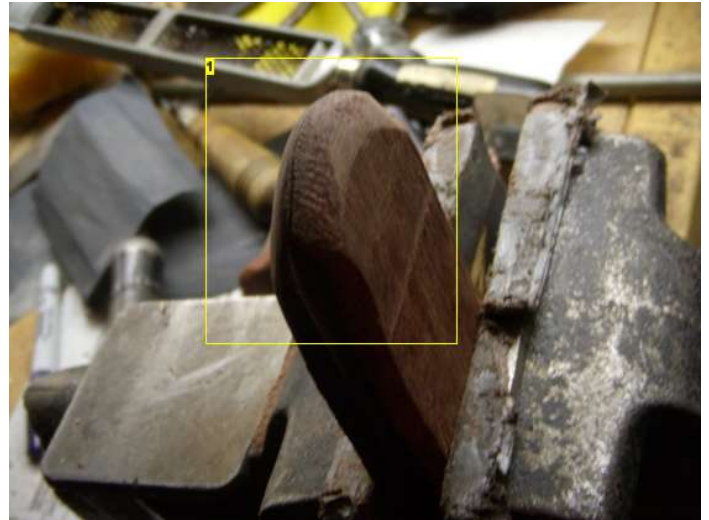


Image Notes

1. The handle shapes traced onto the slab. This isn't necessary, but I wanted to make sure I cut a slab the right size.

Image Notes

1. Shaping the ricasso area.

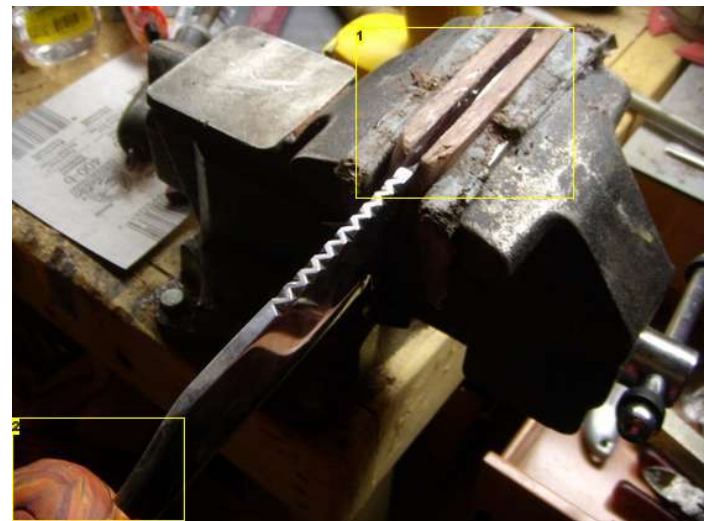


Image Notes

1. Gluing the grip to the blade. I made a little mistake here when I put epoxy on BOTH sides of the blade at once, without drilling holes.

Image Notes

1. Keeping the handle clamped while the epoxy sets.
2. This is a ball of polymer clay. I put it there to keep me from impaling myself while the handle set.



Image Notes

1. Halfway through the shaping process, with the rivets in the holes to test their fit.

Image Notes

1. A peened rivet



Image Notes

1. The handle after it's been sanded, ready for polishing.

Image Notes

1. Duct tape is a good choice for taping the blade, since it's tough and won't leave a sticky residue.

step 8: Getting your edge on

Now, what use is a knife without a sharp edge? Answer: nothing, really. So get out your stone and your steel and get to work. There's a wealth of info on sharpening out there, but here's a primer that will get you there with a minimum of reading.

You should have a good sharpening stone--big, and ideally double-sided. You'll also need some sharpening oil (mineral oil works fine), and a sharpening steel if you like. You'll find the last one in most any kitchen.

Spread a thin layer of oil on the rough side of the stone. Now, hold the blade at a 45-degree angle from straight along the length of the stone and a 20-degree angle from the surface, using your thumb to prop the blade up. That might be a little hard to understand, so look at picture two for an illustration. Picture three just shows the proper edge angle, about 20 degrees as noted previously. Move the blade across the stone in a cutting direction. Sharpen the tip by raising the handle up and rotating it so every part of the tip has contacted the stone. See picture four for a visual aid. Trust me; once you do it it'll be easy to figure out. Flip the blade over every few strokes to get the other side of the edge. Test the edge with your thumb. Once you can feel a clear, sharp edge on every part of the blade, repeat the process on the finer side of the stone.

Now, use the kitchen steel to put the final, fine edge on the knife. There's not much special skill here, just keep that 20-degree angle you used on the stone. You probably know how to use a sharpening steel already if you've ever cooked, but if you haven't it's simple. move the knife in a cutting direction as you did with the stone, making sure every part of the edge contacts the steel. Alternate between each side of the blade on each stroke. Give it about ten to twelve strokes, and it's done. Keep in mind that the steel does not sharpen the blade by removing metal--instead, it reshapes a microscopic flake of steel on the edge of the knife known as the *thinning metal burr*. You'll have to steel-sharpen the knife often and occasionally stone sharpen it to maintain the edge.

To test the edge, hold a piece of copy paper in one hand and, cutting near where you're holding it, try to slice the paper into strips. If it tears or won't cut, sharpen the blade again using the fine side of the stone. If the blade is sharp, though, you'll be able to slice the paper into ribbons.



Image Notes

1. The stuff you'll need for stone sharpening. The steel isn't shown, but you'll find one in most kitchens.

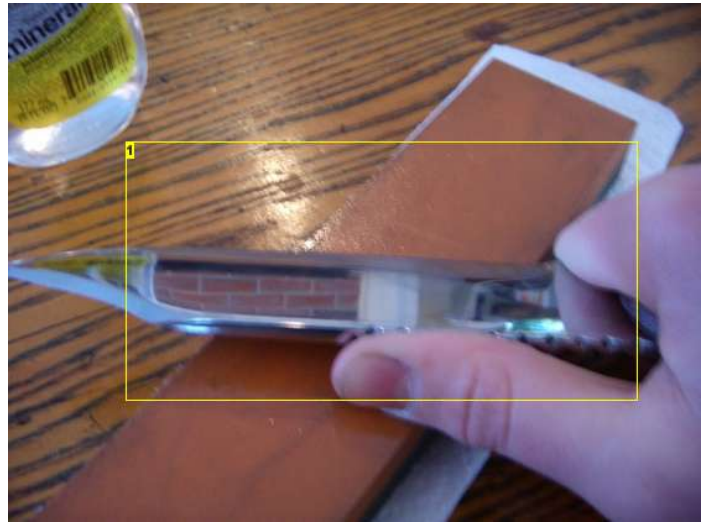


Image Notes

1. The proper angles for sharpening. Use your thumb to prop the blade up against the stone.

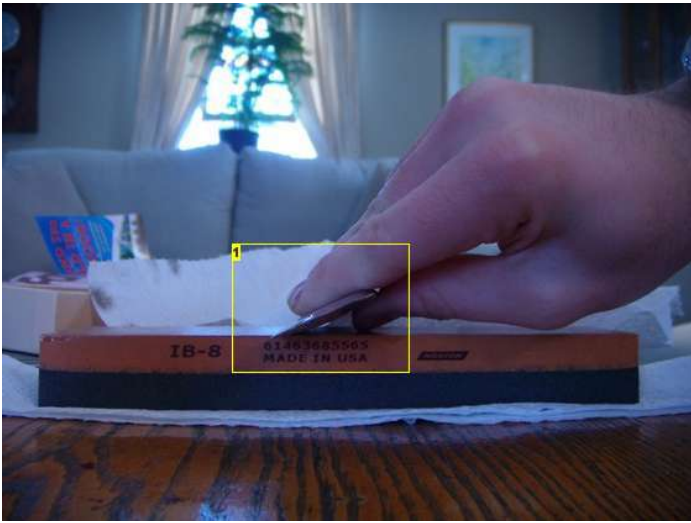


Image Notes

1. The 20-degree sharpening angle.

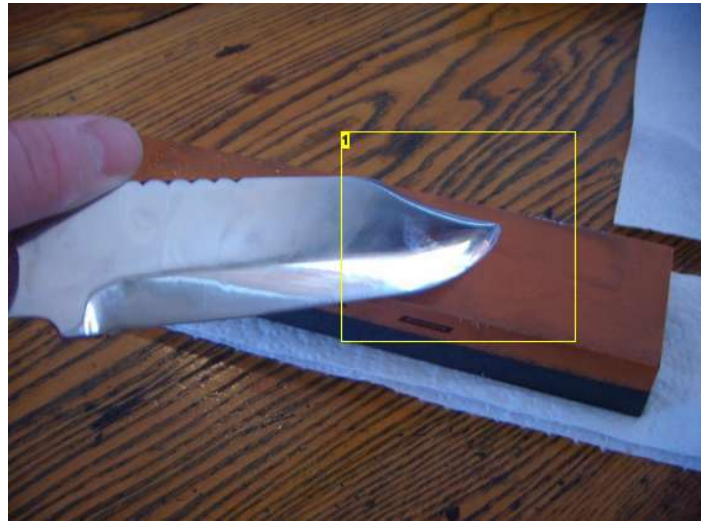


Image Notes

1. Sharpen the tip by rotating the knife up.

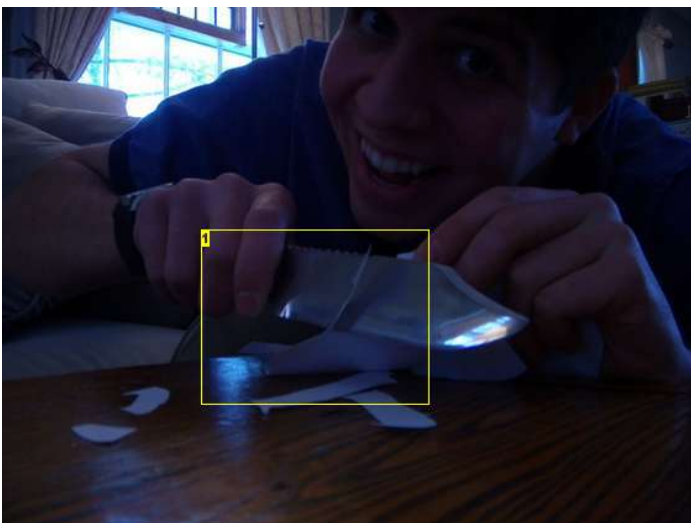


Image Notes

1. Slicing paper.

step 9: Finished! And some of the mistakes I made along the way.

Well, there you go. A finished knife. I'm happy with the way it came out--yet I'm not immune from mistakes. Picture two shows my most egregious error--when I drilled the holes through the first handle slab I hadn't let the epoxy set fully, and the slab slipped before I drilled without me noticing it. It was only after I drilled three of the holes that I realized that the wood wasn't covering part of the handle. Fortunately I one of those holes was in the right place, and I was able to gently move the wood back into the right position before it dried. I continued along with the project and disguised the holes with two plugs of Purpleheart wood. Since I took the picture the wood has darkened and the plugs have become a little more blended with the handle. I kind of like them--they add a little character to the blade.

The third picture is hard to see, but it shows a hairline fracture on the spine of the knife. At first I thought it was just a tough scratch from when I did the filework, but I realized later that it was on both sides of the blade. It's small and I don't think it really compromises the blade's strength, as it only extends about three eighths of an inch in.

I guess this section is just here to let you know that we all make mistakes, and you shouldn't punish yourself for making them. Building a fine knife is something to be very proud of, and a few mistakes make it no less amazing.

Edit: due to popular demand and my own copious amounts of free time, my sheathmaking instructable is now up. Check it out: <http://www.instructables.com/id/How-to-Build-a-Sheath/>



Image Notes

1. It looks good sitting in that log, but what to do with it when I'm done taking the picture?



Image Notes

1. I took this picture in the woods beside my house. Looks nice, huh?



Image Notes
1. Mistake number one.
2. Mistake number two.

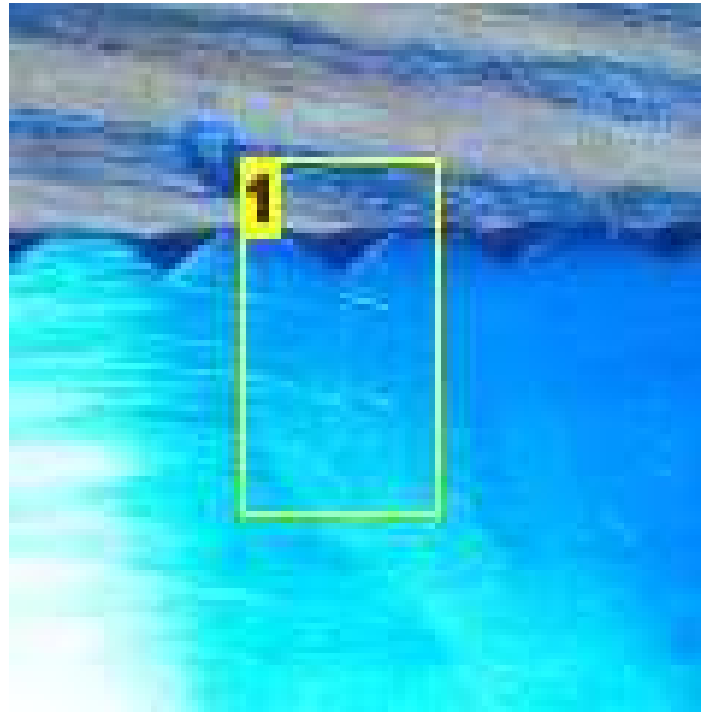


Image Notes
1. There's a small crack here.

Related Instructables



My wooden sword
(slideshow) by CrazyKnife1



My first (good) knife (slideshow) by super moderator



How To Make A Bladesmiths Forge by trf



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sheath knife by oddblob



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Comments

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Caleb777 says:

A Thought On Annealing
Another way is to place it in a bucket of ash this insulates the blade and makes the it cool more slowly which gives you a better anneal.

Note: When using this method you should first heat a piece of scrap steel and place it in the ashes first to preheat them.

Nov 6, 2009. 2:01 PM [REPLY](#)



aj01-01 says:

You can always make a knife out of paper

Nov 5, 2009. 11:34 AM [REPLY](#)





ramboboy says:
cool

Nov 1, 2009. 5:18 PM [REPLY](#)



phelandhu says:
Beautiful blade, I admire your skill and patience.

Oct 30, 2009. 4:19 PM [REPLY](#)



Don,t try this at home says:
What are the dimensions on the steel that you used.

Oct 26, 2009. 5:46 PM [REPLY](#)



Basta says:
The steel was part of the giant plate you see in the pictures, I think 3/16ths of an inch thick. That's rather thick. Go with 1/8th of an inch thick. If you can, buy bars that are already the width of your blade (about one inch).

Oct 28, 2009. 8:07 PM [REPLY](#)



i farted says:
heres my second knife its nowere near done

Jan 23, 2009. 9:03 PM [REPLY](#)



bounty1012 says:
lol, is that cardboard?

Oct 28, 2009. 11:09 AM [REPLY](#)



craz meanman says:
how old are you? im 14, and I'm thinking of making a knife, but i want to know about your experiance. was it hard to make? how long did that take you?

Jan 25, 2009. 7:47 PM [REPLY](#)



stoobers says:
Here's some un-solicited advice for you. I have reprofiled my kabar knife and now am completing my first knife. Pay a lot of attention to the profile of the knife. A profile like the kabar has isn't too useful, unless you want to go around stabbing people with a blunt ended knife. Better to have a profile closer to a fillet knife or a pocket knife (steak knife style).

Jan 29, 2009. 10:33 AM [REPLY](#)

Go to a lawnmower repair store, and find an 8 to 10 inch "edger blade", either new (around \$3) or used (used is free). They are carbon steel, just the right thickness, and will hold an edge. Also, the worn blades are already "worn" into a nice blade shape! Less grinding! These edger blades don't bend, they are so strong, its scary (hot-rolled and hardened steel - a rare combo). Cut your knife from this blank.

Give your knife a blade length between 3 and 4 inches. This sounds short, but that is the only part of the knife you will ever use and therefore ever sharpen. Why waste time on a longer knife, especially your first knife? After you finish one, you will be hooked and will be making dozens. Make the first as simple as possible, else you will give up, and that is a pity.

Instead of "finishing" the first knife all shiny and bright, go to a sporting goods store and buy a bottle of "gun blue" (sometimes called "gun black".) It is a clear fluid that stains carbon steel dark black. Sand the knife to a soft "matte" finish, then stain the blade with the fluid. The knife looks fantastic, and it takes very little work. Again, remember your first knife is the hardest and you need all the help you can get. So do what you can to take it easy on yourself.

You don't need to forge anything if you get pre-hardened steel. You are not going to "break" an edger blade, and you will likely not bend it, either. Grinding is the way to go, as it doesn't change the temper of the metal.

You are on your own for the tang and handle. I make "partial tangs" that go into the wood and stop. I cut a nice round wood handle on a lathe and hammer on an aluminum or copper ferrule (similar to the kabar handle.) Then I drill a hole and hammer the tang / blade in. The tang has been given fishhook like cuts to help grip the wood, then the hole gets filled in w/ epoxy. If the blade pops out, beat it into a lumpy shape and hammer it back in w/ more glue. If you look at knives throughout history, you will see this "hidden tang" show up the most, bec. it is so much easier to make.



temp says:
"Give your knife a blade length between 3 and 4 inches." I would only suggest this for making blades used for whittling, carving, and small tasks. The joy of having a hefty 8 inch long by 1/4 inch thick blade is it has a lot more chopping power. It is literally a small hatchet. This is great for large tasks that include cutting down saplings, splitting small pieces of wood, etc.

Feb 7, 2009. 3:37 PM [REPLY](#)



craz meanman says:

Feb 7, 2009. 5:17 PM [REPLY](#)

ya know i really prefer having my claymore with me just in case (jk). i have no need for an 8 inch blade right now though.



Basta says:

Jan 30, 2009. 9:25 AM [REPLY](#)

Wow, great advice! I've never used edger blades myself but I think I'll recommend them from now on for small knives. The ones I've seen are a little thin for a really sturdy knife and might take a little more finesse to make a nice edge but would definitely work. I really like the gun blue idea, in fact I think I'll try it on my next knife (whenever it is that I get back to my workshop from school).



stoobers says:

Jan 30, 2009. 12:53 PM [REPLY](#)

Edger blades come in a bunch of different thicknesses. Just find the kind that feels right.



craz meanman says:

Jan 29, 2009. 1:52 PM [REPLY](#)

wow, thanks! that's some really good advice! I think i will make my tang/ handle much like the author of the "how to make a bus knife" instructable did. now all i need is an edger blade, and some time...



i farted says:

Jan 26, 2009. 5:37 PM [REPLY](#)

im 13 it was sort of hard to make. if your going to make one i would say use a dremel. thats what i used. dont try and use a regular saw because its really hard and i cut myself with it. luckily my finger didnt fall off. once you get the dremel it takes about 2-3 minutes to cut the steel depending on what your using.



craz meanman says:

Jan 27, 2009. 7:18 PM [REPLY](#)

Ive got the dremel and plenty of cutting discs, unfortunately the mom said no to the forging aspect. maybe i can get her to let me do it with the method detailed in this instructable. (just cutting up some steel)



qballcat says:

Oct 18, 2009. 9:26 PM [REPLY](#)

my first knife, i dont have any real probs with it, its razor sharp i would only like it to be shiny-er. also the tapered part (the word escapes me at the moment) that leads to the edge, i want that to be smoother.
also i am 14 but i was being safe :D the quenching was awesome but i love the final product. its going to be a hunting knife.
thanks for reading all that
-kieran



Don,t try this at home says:

Oct 27, 2009. 5:00 PM [REPLY](#)

What do you mean by shiner.



qballcat says:

Oct 27, 2009. 6:42 PM [REPLY](#)

better lustre...er ness, cut me some slack im 14 :P



LokiGnosis says:

Oct 25, 2009. 1:19 AM [REPLY](#)

Well done.
Excellent, keep at it because who knows how good you can become if you are already doing work like this at 14 .
I could barely make a cup of tea at 14.....



qballcat says:

Oct 25, 2009. 10:18 AM [REPLY](#)

thank you very much, one thing though why were you on at 2 in the morning? :P



LokiGnosis says:

Nov 14, 2009. 6:16 AM [REPLY](#)

Well, qballcat, the easy answer is that I'm allowed to, seeing how I'm a grown up but on the other hand are you sure that the 2 o'clock isn't your time and not my time, I take it that you are in the States?

A more frightening thing is that I have been out even later, Shock, Horror!

Here's a pic outside the "Ain't nothing but" bar in Londons Soho, at 4:30am and a 2 hr drive home, I know, terrible isn't it.....

Blues, Booze and a Blonde (The Wife).

Anyway, enough banter, as I said before a really nice knife.....well done.

Loki.



Basta says:

Oct 18, 2009. 10:14 PM [REPLY](#)

Awesome job there. Very promising for a first knife and I hope you continue. I'm pretty sure that tapered part is called a "false edge," and it looks pretty good to me. I encourage you to learn as much as you can about knife making as you undoubtedly have some talent.

Bravo! And good luck with all your projects.



qballcat says:

Oct 18, 2009. 10:20 PM [REPLY](#)

thanks :D i plan to make many more, thankyou very much for your instructions, very helpful (I remember, i call the "false edge" a bevel, but thats wrong I think)



geodez says:

Oct 21, 2009. 9:31 AM [REPLY](#)

picture 6, epic zombie weapon.



geodez says:

Oct 3, 2009. 9:55 AM [REPLY](#)

i have a nice block of purpleheart wood, i was wondering what to do with it.



kingalex1 says:

Oct 12, 2009. 7:32 PM [REPLY](#)

purpleheart wood is nice....



geodez says:

Oct 14, 2009. 10:30 AM [REPLY](#)

wood.....iiiiiiiiiiiiiiiiice....



kingalex1 says:

Oct 20, 2009. 7:11 PM [REPLY](#)

hahaha....



geodez says:

Oct 21, 2009. 9:28 AM [REPLY](#)

yes!



peterlonz says:

Aug 3, 2009. 7:56 PM [REPLY](#)

One rivet hole closest the blade in your pic shows what looks like a "breakout splintering" which is relatively deep & is clearly not removed in the handle sanding operation.

I assume you will try to fill this defect with coloured filler?

These things are hard to avoid particularly in hardwoods & I wonder if you have found a drilling technique that eliminates this risk?

Sorry to be picky but this small defect could spoil an otherwise near perfect job.



hackmattr says:

Oct 19, 2009. 5:03 PM [REPLY](#)

When you drill using a drill press, make sure there is a piece of scrap wood underneath the piece your drilling. This is one way to prevent the splintering. Another helpful way of avoiding the splintering is to have a sharp drillbit and to take it slow. If you take it slow then the bit has time to clear the shavings and therefore has a better cutting edge.

Those are my tips for drilling hardwoods after about 8 years of woodworking experience.



Basta says:

Aug 4, 2009. 10:17 AM [REPLY](#)

I was quite a bit disappointed by that one splinter--and yeah, I did try colored filler but the result was sub-par. Since you asked, I *have* found a way to stop it. When I drill the handle scales I clamp them together with a piece of pine underneath--that way, the little bit of wood at the bottom of the scale isn't affected by the pressure of the drill bit above it, as it's held in place by the pine. It's like drilling through one continuous piece of wood, and any damage done by drilling through will be done to the throwaway wood and not the scales. Not sure if you wanted to know all that, but in case you did...



dejure says:

Aug 20, 2009. 7:30 PM [REPLY](#)

Regarding that splinter, everyone knows such things are merely improvements. Said another way, where there is no solution, there cannot be a problem. It just sounds like an inlay project to me.



hackmattr says:

Oct 19, 2009. 4:45 PM [REPLY](#)

This instructable is good. I have made only one knife before for my uncle with a myrtlewood handle. I think I'll try it your way so that I can have one.



Whales says:

Aug 23, 2009. 5:51 PM [REPLY](#)

I can't understand the tempering part, can someone explain.. soon hopefully..



kerns says:

Oct 12, 2009. 9:09 PM [REPLY](#)

Here's some initial info. If you're really interested look into the many knifemaking forums online as well.

http://en.wikipedia.org/wiki/Heat_treatment#Hardening_and_tempering_.28quenching_and_tempering.29



punkhead58 says:

Sep 28, 2009. 7:40 PM [REPLY](#)

Very nice. I don't know why you used wooden rivets, but very nice regardless.



z-man6233 says:

Sep 29, 2009. 5:29 AM [REPLY](#)

he used brass rivets.....



SpunkChicken says:

Sep 17, 2009. 7:14 PM [REPLY](#)

This is awesome man, I can't wait to try it!



Homeschooler360 says:

Sep 15, 2009. 8:43 AM [REPLY](#)

Couldn't I cut out the blade with say, a Dremel tool?



Basta says:

Sep 15, 2009. 8:20 PM [REPLY](#)

Short answer, yes. Longer answer, I can't vouch for the type of steel you're using and its thickness, which will complicate things. Trial and error is king.



willlii says:

Sep 10, 2009. 4:05 AM [REPLY](#)

its look great i m gonna do that thanks



rorpen says:

Sep 10, 2009. 2:50 AM [REPLY](#)

Why are you called Basta...
Is it like Inkheart??



Luki101 says:

Sep 2, 2009. 12:26 PM [REPLY](#)

I tried to make a knife out of an old hardened steel Square, and it turned out almost OK but not what i was hoping for =P this is my first knife and sheath that ive ever made. Any suggestions on how to get the yellow enamel paint crap off o the blade? It just kept ruining the sanding discs for my dremel, and i dont have a belt sander or anything.



Basta says:

Sep 3, 2009. 3:46 PM [REPLY](#)

Try sanding it with normal sandpaper. Enamel shouldn't be harder to get off than heat-treating scale, and I just hand-sanded. I would guess from the enamel's presence that you didn't heat treat--but you've got a good start there. Are you sure it's hardened? In my experience any metal that comes painted isn't intended for tool work.



Thundertydus says:

Sep 9, 2009. 10:39 PM [REPLY](#)

Trying to make a dragon combat knife

<http://www.black-bear-haversack.com/images/Fire%20Breathing%20Dragon%20Knife.JPG>

That's the more complicated version of my design.



Luki101 says:

Sep 4, 2009. 9:54 AM [REPLY](#)

The thing I made it from said "Hardened Steel" across it so I didn't bother with trying to harden it myself. I'll try sanding it. Thanks



(())jAkE(()) says:

Sep 4, 2009. 3:12 PM [REPLY](#)

Can you make a pocket knife like this?

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