



Chime and Chime Again

Pretend the weather is improving by cranking up the furnace and hanging some wind chimes. Denial isn't just a gift, you need to practice.



Materials:

- 6' piece of 1/2" copper pipe
- Fine copper wire
- Heavy copper wire
- Medium steel wool

Tools

- Pipe cutter
- Drill
- Drill bits
- Wire cutters
- Metal file
- Compression punch or hammer and nail
- Ballpein hammer
- Screwdriver
- Tin snips

Steps:



Buy a piece of half inch copper pipe



The pipe usually comes with lettering and tarnish on the outside



Clean it up with a little steel wool

Cutting the chimes

Buy a length of 1/2" copper tubing used for plumbing water lines. Clean up the tarnish and lettering on the outside using a piece of steel wool.



Pipe cutter



Use the pipe cutter to cut the lengths of pipe



Remove any sharp edges with a metal file

Cut the pipe into five or six pieces using a pipe cutter. Adjust the cutter to fit snugly on the pipe at the place you want to cut. Tighten it down just enough to allow it to circle the pipe making a sharp score line without denting the pipe. Copper is soft and the pipe cutter can actually crush the pipe if over-tightened. You may have to start again if the cutter begins to spiral. The cutting blade should stay in the same track with each revolution.

Tighten the pipe cutter by one-quarter turn on each revolution until the pipe drops away. Cut pieces of different lengths greater than 5 1/2". (the pipes won't ring with that nice musical sound if they are cut shorter than 5 1/2") Use a metal file to remove any sharp edges at the freshly cut ends.



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To drill the holes, first file a little flat spot on the pipe



Use a compression punch to make a little dimple to prevent the drill bit from skating



Drill a hole through both sides of the pipe

Drilling through the chimes

Drill a hole through both sides of each pipe. Drilling the holes an inch or two above the center point will give each tube a great deal of movement in the wind. The closer the holes are to center the more the movement. The further from center, the less the movement. If you don't want to hear the chimes every time a moth farts, drill the holes closer to one end.

Drill the hole about twice the size of the wire that you intend to use to hang the individual pipes. Choose a fine wire because a thick one will dampen the ring of the chimes. Use a compression punch or a nail and hammer to make a little dimple in the spot to be drilled. Drill the hole through the first side and then continue all the way through the second side. Use the metal file again to take off any burrs the drilling may have created.

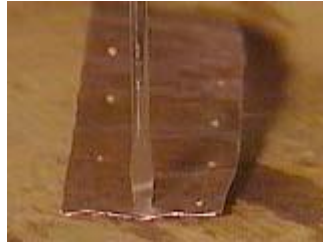
If you have chosen a harder metal like steel, you will have to use a cobalt drill bit, which withstands higher temperatures before dulling. Drill slowly, apply pressure and put a little oil on the area to keep it cool. When the bit begins to exit the opposite side, turn the piece over and finish reaming the hole.



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Cut a piece of copper sheet leaving a tab at one end



Use a hammer and screwdriver to punch a slot for the tab



Use a hammer and nail to punch holes for the wires

Making the collar

Make a collar of copper sheeting to hang the tubes from.

Tip: Copper sheeting can be found in some craft stores, or you can buy scraps cheaply from a metal salvage yard or sheet metal fabricator, or from a roofer who uses copper for flashing roofs.

Cut a strip of copper about 2½" wide and 10½" long. Cut away ½" of one end of the strip leaving a ¼" tab in the center. Next, use a hammer and straight screwdriver to punch a slot in the center of the other end about 1" in from the edge. Adjust the tab to fit the slotted hole if necessary.

Punch seven holes along one edge of the copper using a hammer and nail. The holes will be threaded with wire to suspend the chimes. Then punch four holes along the opposite edge. These will be threaded with sturdier wire in order to hang the whole assembly.



Use a ballpeen hammer to distress the copper



Form a circle and attach the ends together with the tab



Two types of fishing swivels

To distress the copper sheet and give it a bit of character, place it over a soft piece of wood and hit it gently with the round end of a ballpeen hammer. Clean it up with the metal file to take off any sharp edges created from drilling or cutting. Then form it into a collar and pass the tab through the slot you made earlier, bending the tab over and snugging it down.



Hang the collar by threading pieces of wire through each of the four holes and up to the center. Use a fishing swivel at the top to join the wires. Twist them through one end of the swivel. Then form a hook out of heavy copper wire, hook it through the other end of the swivel and hang the copper collar.

Tip: Fishing swivels can be found in sporting goods shops. They're great because they allow the wind chime to turn freely with the breeze.



Form a hook with heavy copper wire



Connect the hook to the swivel and the swivel to the wind chime below



Hang the copper circle and tie the pipes to it



Use a fine copper or steel wire and don't allow the wire to touch the sides of the pipe



Finished copper wind chime

Hanging the chimes

Attach the individual chimes to the copper collar using fine wire. Space them so that the wire doesn't press against the sides of any of the chimes because that will dampen the ringing effect. Adjust the height of each individual chime so they knock together effectively.

If the tubes don't bump each other easily enough in the wind, add a tube in the center by suspending it from two holes that are across from each other.





Patinated copper wind chime



Copper nitrate solution used to create a blue green patina on copper



Be sure to treat chemicals with caution



Rebar wind chime

Verdigris finish

To create a blue-green patina on the copper, mix 200 grams copper nitrate with 200 grams of table salt in one liter of clean water. Clean the copper very well with steel wool and spray or sponge on the mixture once each day for four or five days. Allow the metal to sit for several weeks and then apply a wax finish. The surface will be very fragile and the longer it is left alone the more stable it becomes. Copper nitrate can be purchased from a chemist and you must follow the caution sheets provided to handle it safely. It is very caustic and should be handled with awareness.



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