DIY Pendant Light

twofeetfirst.net/diy-pendant-light

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A step-by-step tutorial on how to build a DIY pendant light for above the kitchen sink.

To kick off our kitchen remodel, the first thing we did was remove the boring fluorescent light above our kitchen sink. Who likes a plain light anyway?? But now we needed to replace the light. After searching for the perfect light, we came back with not a single one we liked or thought would work in our space. So the only solution was to make our own pendant light. Are you ready to see the finished DIY pendant light above the sink? Here it is...

How about another angle, nighttime?

What do you think? We are LOVING the new light. But how fun would it be if I just showed a picture without a tutorial? SO without further ado here is how to make a pendant cage light with a wooden box.

SUPPLIES:

- lamp bulb guard
- keyless light socket
- antique cloth wire (*we got 8ft but used about 5ft)*
- wire cord grip
- 14-2 or 12-2 wire (*about 3 ft*)
- wire staples
- electrical tape
- wire caps
- spray paint
- light bulb (*we used 40 watts LED light, here*)
- pull-chain switch (*optional if you do not have a light switch*)
- lamp nipple (*for pull-chain*)
- tube coupling *(for pull-chain*)
- extra chain (*for pull-chain*)
- wood – 1″x8″x4ft & two:1″x3″x8ft boards
- 1.25″ finishing nails
- 1/4″x3.5″-4″ bolt with nut

TOOLS:

- drill
- screwdriver
- wire stripper
- voltage tester
- hammer or air compressor w/nail gun
- razor blade

Check out the list of tools we use here!

Please Note that we are not electricians and you should be aware that there are dangers in doing this project yourself. Please be careful and do your research so you do not get electrocuted or burn down your house!*

Now that we have the supplies lets began with the process. First I decided to paint the light bulb guard a different color because I did not like how black they were. So I placed them in a box and spray painted them with Oil Rubbed Bronze. **QUICK TIP: To make your can of spray paint easier to use get a spray gun to keep the paint off your fingers.** *I love this thing and its less than $3***.**

CREATE WOODEN LIGHTBOX:

Next, I created the wood box frame. To do this, I cut the 1″x3″ boards to the width of the 4 ft board (*twice*) and the length of the 4 ft board plus 1.5″ (*twice*). *I would give the measurements but to make sure it all fits your 4 ft board perfectly, it is better if you measure your own board*. Then I made the new wood look old by using this process. But before staining the wood, I assembled the box by placing the smaller cut boards along the side (*width*) of the 4 ft board, nailing the board in place.

TIP: Make sure the sides you want showing are on the outside, not the inside of the box you are creating. After nailing the smaller boards, place the longer boards along the side (*length*) and nail into place also. Now you should have a box.

I then drilled 1/4″ holes into the wood where we wanted our pendant lights, centered in the middle of the wood *(I placed ours so they would be centered in the window above our sink*). Plus I did do this step before assembling the box but it can be done after.

Now depending on how you will be mounting the lights to the desired area & if you have a light switch, you can skip the next couple of drills. Because we are mounting our lights to the cabinet above the sink we decided to bolt them together. So we placed two more 1/4″ holes into the box, looked like this after finished.

Another thing we had to do was drill a hole in the side of the box for the pull-chain because we have NO light switch. Yes, we will show you the basics of wiring a pull-chain to any light.

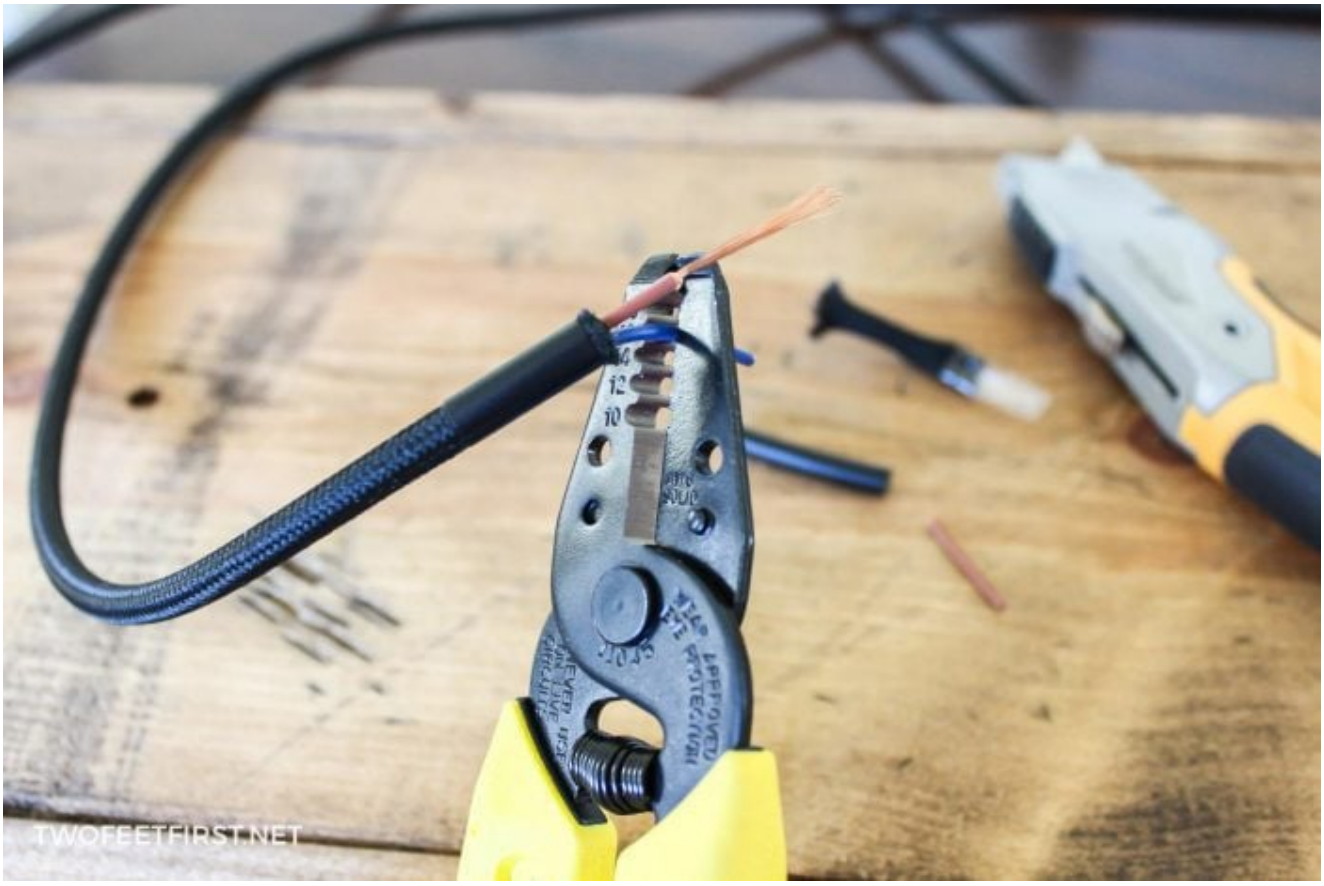
Now we could take a damp cloth and wipe the wood. Then added the stain, we used Provincial by Minwax. This is my new favorite stain color…

WIRING LIGHT SOCKET:

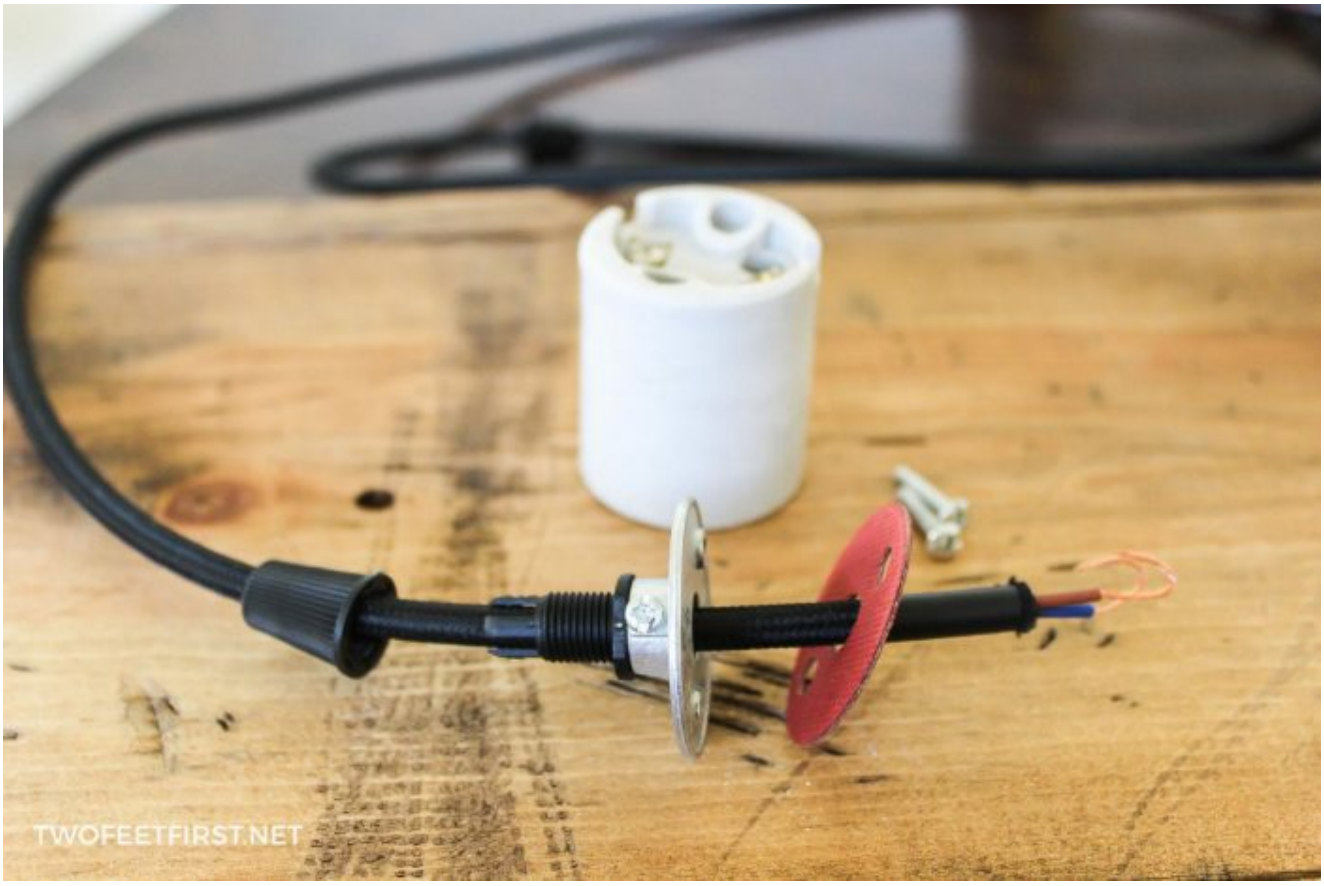
Time to start wiring the light, *please remember we/I are not electricians and I do not know the technical names*… We decided to use an antique round cloth wire but you could also use a twisted antique cloth wire (example here). Plus they also have colored wire… We purchased 8 ft of the wire but used around 5 ft because we used 14-2 wire we had on hand to connect the lights together. I took our porcelain light socket (*linked to a different one than pictured because it's cheaper and you do not need the extra parts*) and unscrewed the top metal piece from the porcelain so I could attach the wires.

Next, I took about 1 1/2″ of black electrical tape and taped around the cloth wire about 2″ away from the end of the wire (*this will help the cloth from fraying & moving*). Taking the razor blade, I carefully cut the cloth of the wire just below the electrical tape (*making sure to **NOT** cut through the wire*). Then I removed the cloth from the wire. I found that I did cut through the black cover over the actual wires just slightly and if I moved the wire end back and forth, the black cover would come right off.

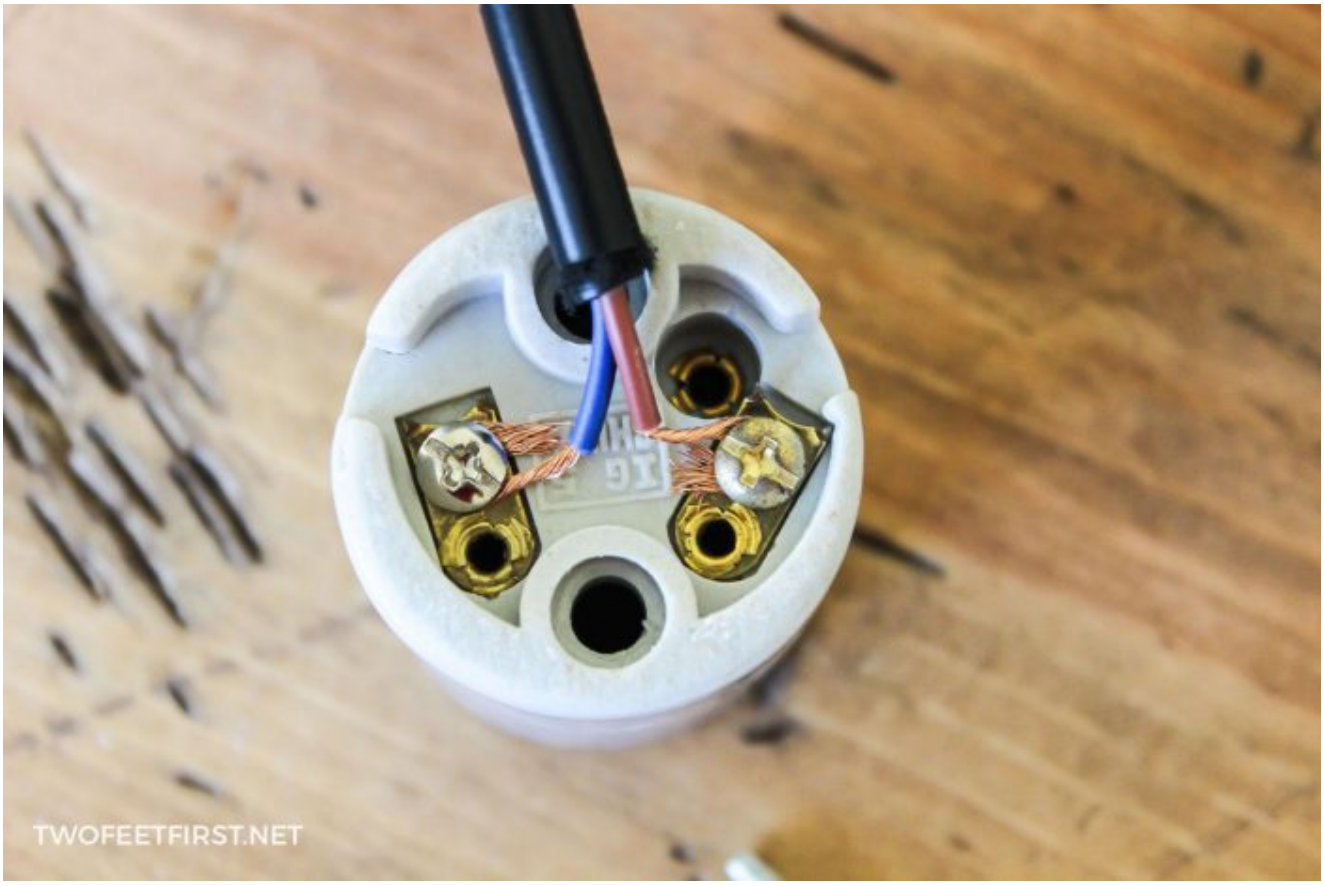
Then taking our wire stripper tool (*love this thing*), I removed about a 1″ of the wire cover to expose the actual wire.



Next, I took the wire cord grip (*this helps the cloth wire stay in place and reliefs stain on the wire*), and placed it onto the wire, like pictured below. Then I took the metal top of the light socket and placed it onto the wire also (*I did attach the bottom of the wire grip to the metal piece first*). I found it helped to twist the ends of the wire together and form a hook before attaching to the light socket.



Now that I had our hot (*black or brown*) and neutral (*white or blue*) wires all ready to install. **TIP: When installing wires to the light socket, make sure that the loop in the wire is going the same direction as the way the screw tightens.** Then I attached the hot wire *(brown in our case but usually black)* to the brass screw and the neutral wire *(blue in our case but normally white)* to the silver screw.



After attaching the wires, we then reattached the light socket back together. Then screwed the wire cord grip into place. **TIP: DO NOT overtighten the grip because it can break, please don't ask how I know that…** I then had this.

At this point, I installed a cage to the socket, threaded the wire through the wooden box and taped the wire in place to decide on the length we wanted our lights to be. This was done by one of us holding the box into place above the sink and adjust until we were happy.

I then marked the wire with a white colored pencil right where it comes through the inside of the box. Next, I took a piece of electrical tape and placed it about 8-10″ from this mark around the wire then I cut the tape in half right through the wire.

Now before I cut any more wire, I first installed the other 2 light sockets to the ends of the wire the exact same way as the first light socket. After installing the light sockets, I then measured the distance from the first light socket to the marked line on the wire. With that measurement, I then marked the other two light sockets to that same distance. Then again added electrical tape about 8-10″ from the mark and cut the tape in half right through the wire. Now our light sockets were wired and ready to be installed on the wood box.

WIRE THE BOX or put it all together:

To wire the box, I threaded all three light socket wires through the holes I previously drilled. Starting with one wire, I moved the wire until the marked I placed was right where it comes through the inside of the box (*same way as the light used to find the perfect length for the pendant light*). Then taking our wire staples, I secured the wire to the board, I added a couple in a zig-zag pattern just to make sure the wire would not move (*you will want to leave about 4 inches at the end of the wire*). I did this for the other 2 lights also.

MEDIAVINE

Once the wires were secured to the wood, I then took some electrical tape and taped the wires about 3″ away from each end. Taking the razor blade, I carefully cut the cloth of the wire just below the tape (*just like before*). And just like before I removed the cloth plus the black plastic covering the actual wires. I then took my wire strippers and stripped about a 1″ off each wire to expose the hot and neutral wires. I did this for each light socket wire.

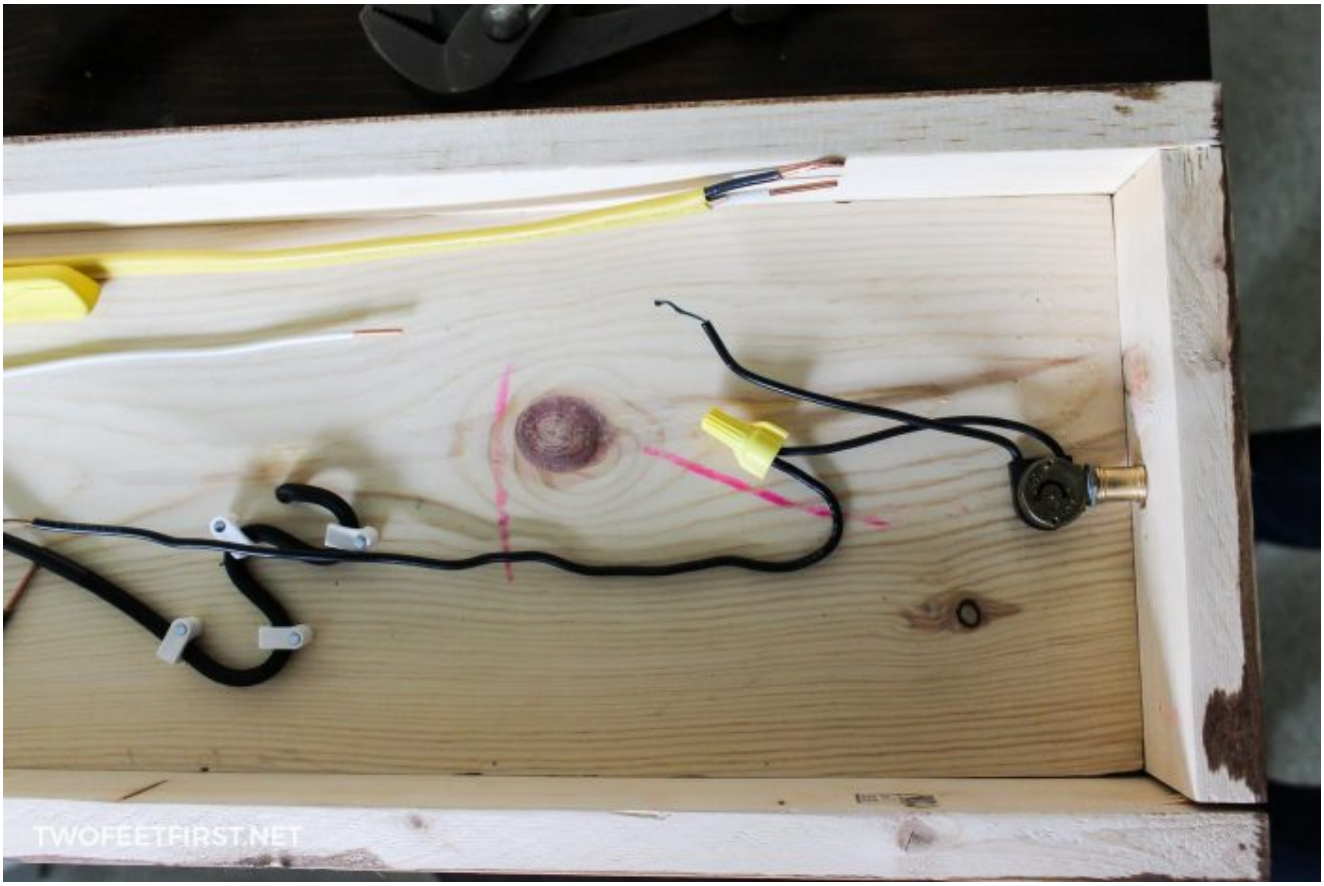
Next, I installed the pull-chain switch to the box. Now because the 3/4″ wood is thicker than most lights, I had to adjust the attachment for the switch. To do that, I used a 1.5″ lamp nipple (*pipe fitting with male ends*) and placed it inside the hole I drilled on the side of the box. Next, I took the tube coupling and attached the pull-chain switch to the lamp nipple on the inside of the box with it. Then I screwed the other side of the lamp nipple to the screw that holds the switch in place (*sorry I have no idea what it's called*). Later I added the extra pull-chain to the end of the switch.

Now that the pull-chain was installed, I then wired everything together. This is where the extra wire (12-2 or 14-2) comes into play. I took the extra wire (*mine was 14-2 that we used for installing a new breaker*) and cut a piece the distance from the middle of the box to the pull chain switch plus at least 3 extra inches (*believe me you want to have extra wire to move around*).

Then I cut another piece of wire from the pull chain to the next closest light socket wire plus at least 3″. If you are not adding a pull chain switch, cut the first wire from the middle to one of the light socket wires on the end plus 3″. I did this two more times going from one light socket to the next plus adding at least 3″. I now had all the wire I needed to wire my lights together.

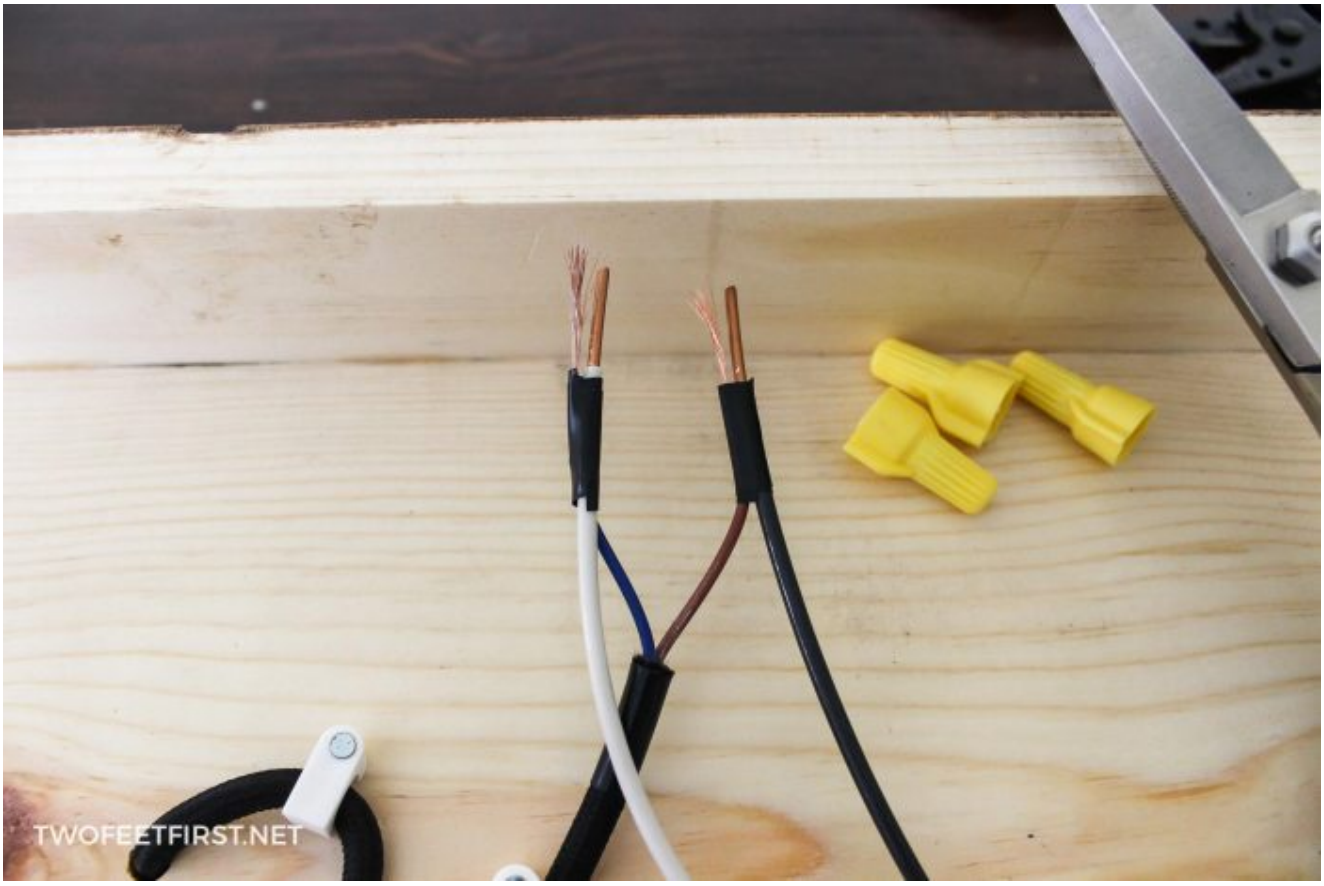
Starting with the first extra wire I cut, I removed the hot and neutral wires from the yellow cover (*I now had black and white wires*). Then with my wire strippers, I stripped about 1″ off each end of the wire. Because I have a pull-chain I will wire the pull-chain switch first but if you do not have the pull-chain skip this next step. I then took the black wire (*hot wire*) and wired it to one end of the pull-chain switch (*a pull chain has two black wires*).

To wire them together, I took the black wire from the switch and twisted it around the extra black wire, then adding a wire cap to keep the wires together. Then taking the next extra wire (*the one from the switch to the first light socket wire*), I removed the yellow cover and only using the black wire, stripped the ends of the wire about 1″. With that same black wire I then wired it to the other black wire on the pull-chain switch, I twisted the pull-chain switch wire around the extra black wire, then adding a wire cap to keep the wires together.

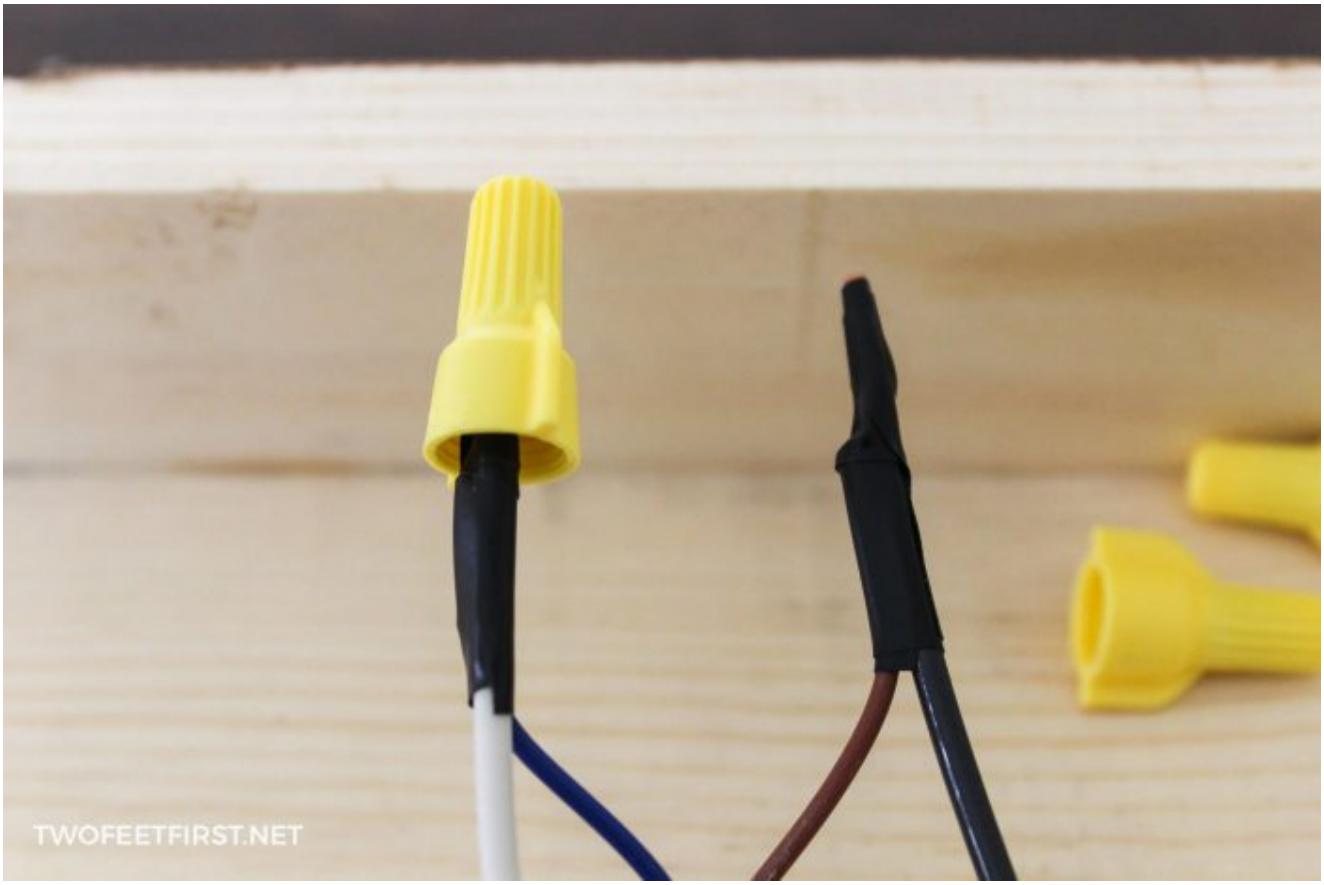


Now I wired the lights to the switch, first I removed all the hot and neutral wires from the extra wire cover (*mine was yellow*). Then I stripped about 1″ off each end of each of the wires. Starting with the light closest to the pull-chain switch, I took a piece of the electrical

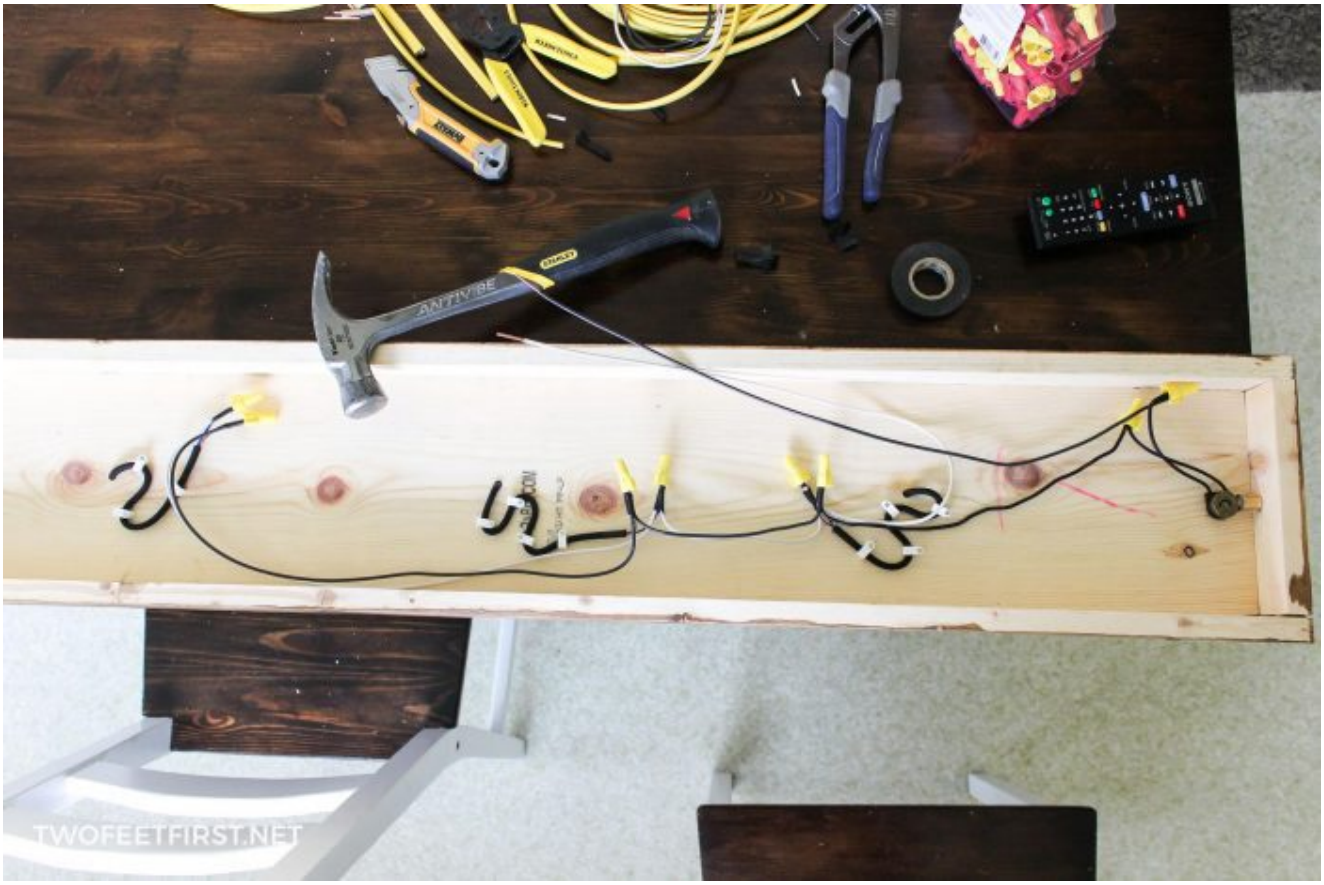
tape and taped the hot wires from the pull-chain (*black*), wire from the light socket (*ours was brown*), and the extra wire in-between the current light and middle one (*black*) together. I also did this for the neutral wire (*white*). Just like the picture below, *this picture is of connecting the last light that is why there are only 2 wires, not 3.*



Next, I took another piece of electrical tape and taped the actual wires together. I found that the wire coming from the light socket would not stay connected unless I taped the wires together. Then I placed a cap on the wires. Like the picture below.



The first light is now wired so I moved to the next light completing the same process. And then to the last light but this time there will be 2 wires not 3, *like the pictures above*. The back of the lightbox now looked like this and that is how I wired three lights together.



INSTALLING:

Now it was time to add the light above the sink. **FIRST THING FIRST, turn OFF the power to the wire by turning the breaker OFF.** To make sure the power was off, we used our voltage checker to test. Then we found the location we wanted the box and marked where the bolts would go to hold the box to the cabinet. I took my drill and drilled 1/4″ holes into the marked spots.

Then with the help of Eric, he held the box while I wired the light, using the wire caps. Then I turned the power back on and tested the wires, making sure all the connections were working with the voltage checker (*make sure the switch is on*). After checking the wires, we then bolted the box to the cabinet. I then added the light guards to the light sockets and installed the light bulbs. And we now have our own DIY pendant light!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How about a cost breakdown to give you an idea of the cost, everything I mark as free we already had on hand.

MATERIALS:
lamp bulb guard = $16.50 (*for 3*)
keyless light socket = $13.90 (*for 3)*
antique cloth wire = $7.60 (*for 8 ft)*
wire cord grip = $4.50
14-2 or 12-2 wire (*about 3 ft*) = FREE (*about $2, you can buy it by the foot*)
wire staples = $3.80
electrical tape = FREE (*about $2*)
wire caps = FREE (*about $2.20*)
spray paint = FREE (*about $5*)
light bulb = $7.50
pull-chain switch = FREE (*would cost about $4.30*)
lamp nipple = FREE (*would cost about $3.30*)
tube coupling = $1.75
extra chain = $3
wood – 1″x8″x4ft & two:1″x3″x8ft boards = $10.75
1.25″ finishing nails = FREE *(would cost about $4.75)*
1/4″x3.5″-4″ bolt with nut = $1

Our TOTAL = $70.30
TOTAL FOR ALL MATERIALS = $93.85, without pull-chain $81.50

What do you think of our pendant cage light? Do you like the wood box to give it a little more texture? I would love to hear your thoughts or what I did wrong. But let's leave with a before and after...

how to build a PENDANT LIGHT